

EXPORT PATTERNS SHIFT WITH FALLING DOLLAR

U.S.'s **TRADE** balance turned positive, and Europe's costly exports faded

THE SINKING VALUE of the U.S. dollar, especially compared with Europe's euro, interrupted the 2006 trend of an upswing in exports from all major trading regions. The U.S. enjoyed a chemical trade surplus for the first time since 2001, in large part by taking business from European exporters who were hurt by the expensive euro. Meanwhile, although still a huge importer of chemicals, China has narrowed its trade deficit.

The fall of the dollar compared with other world currencies is working to the advantage of U.S. chemical exporters by making products manufactured in dollars more attractive when priced in foreign currencies. For example, in 2006, \$100 worth of U.S. chemicals would sell in Europe for an average of 80 euros; in 2007, those same chemicals would sell for only 73 euros. In 2007, U.S. exports to Europe increased 15.7%.

Overall, because of more competitive pricing in overseas markets in 2007, growth in U.S. chemical exports exceeded growth in imports. In fact, exports rose significantly in all segments. Results for imports

were mixed, however. U.S. imports of plastics fell for the first time in many years. Only in fertilizers did imports increase significantly, by 44.4%, as U.S. farmers turned to the international market to meet a huge increase in demand.

One segment where the U.S. has seen an increasingly negative trade balance is in medicinals and pharmaceuticals. In 2007, the gap widened to over \$20 billion. U.S.-based drug companies increasingly use active pharmaceutical ingredients that are manufactured overseas.

Although Canada's trade deficit has not been erased like the U.S.'s, it fell from \$9.5 billion in 2006 to \$7.3 billion in 2007, its lowest level since 1998. A big contributor to the country's export increase was the basic chemical sector, which expanded its surplus from \$200 million in 2006 to \$1.9 billion last year. Although Canada is a large agricultural chemical maker, it imported 12.8% more in that segment.

Chemical sales for Europe as a whole were strong, but export growth slowed in major exporting countries such as Ger-

many and France. The extremely strong euro made European chemicals seem high-priced compared with U.S.-dollar-priced goods. The European petrochemicals sector, in fact, saw a trade surplus decrease of almost 50%, according to the European Chemical Industry Council. Only pharmaceuticals and, to a lesser degree, consumer chemicals increased their trade surplus.

On a country level, Germany, Belgium, and the Netherlands managed small trade surplus increases, but the U.K. saw its trade surplus decline by about two-thirds because of a 16.5% increase in imports.

In Asia, Japan slightly increased its already strong trade surplus. Double-digit hikes in overseas shipments of synthetic resins and organic chemical shipments contributed to a total export growth of 11.5%. However, Japan is still a large importer of inorganic chemicals, and in 2007, its imports in that segment increased by more than 26%. Interestingly, South Korea's petrochemical exports rose by almost 20% in 2007.

China's results further amplified the important role it already plays in global chemical trade. The country absorbed more than \$68 billion worth of chemicals in 2007. That's almost half of U.S. chemical imports and an increase of 22.0% over the previous year.

Nevertheless, China still posted a large chemical trade deficit in 2007. But because Chinese chemical exports are increasing far faster than imports, its trade deficit is shrinking, with most of the deficit coming from organic chemicals. China's chemical trade deficit was \$17.4 billion last year compared with \$18.4 billion in 2006.

U.S. TOTAL TRADE

Chemical industry kept the number two spot among exporting sectors

\$ BILLIONS	EXPORTS				IMPORTS			
	2004	2005	2006	2007	2004	2005	2006	2007
Machinery & transport equipment	\$393.3	\$433.7	\$494.5	\$536.4	\$596.8	\$649.9	\$709.8	\$738.7
Miscellaneous manufactures	95.7	103.8	116.0	127.1	241.2	259.8	276.4	293.8
Chemicals	112.9	123.1	138.6	158.2	112.9	128.3	142.8	155.4
Manufactured goods classified by material	78.7	89.2	103.5	112.5	170.2	190.8	223.0	227.2
Food & live animals	45.5	48.3	54.3	62.3	47.0	51.4	56.1	60.9
Crude materials, inedible (except fuels)	37.0	41.2	50.1	62.4	26.3	28.6	30.4	30.5
Mineral fuels & lubricants	18.9	26.4	34.9	42.0	205.9	286.4	333.5	360.9
Beverages & tobacco	4.8	4.5	5.1	5.4	12.7	13.9	15.8	17.3
Animal & vegetable oils, fats & waxes	2.0	1.8	2.1	2.9	2.3	2.4	2.9	3.3
Other	29.1	32.5	38.2	53.5	54.3	59.5	64.4	65.7
TOTAL	\$817.9	\$904.5	\$1,037.3	\$1,162.7	\$1,469.6	\$1,671.0	\$1,855.1	\$1,953.7

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

U.S. CHEMICAL TRADE, BY REGION

Exports to all regions except Canada and Japan increased at double-digit rates

\$ MILLIONS	2004		2005		2006		2007		CHANGE, 2006-07	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Europe	\$36,896	\$67,267	\$39,853	\$73,136	\$45,398	\$79,653	\$52,546	\$85,976	15.7%	7.9%
Canada	20,053	16,674	22,413	19,727	24,583	22,172	25,498	24,335	3.7	9.8
Latin America	22,484	6,901	25,459	8,616	30,064	10,385	34,345	10,358	14.2	-0.3
Japan	7,702	8,325	8,166	8,500	8,653	8,029	9,373	8,599	8.3	7.1
China-Vietnam	4,831	3,770	5,549	5,216	6,402	6,286	8,648	7,315	35.1	16.4
Rest of Asia	15,442	6,276	15,904	8,023	17,095	10,589	19,593	12,290	14.6	16.1
Australia	2,189	587	2,435	620	2,400	755	2843	843	18.5	11.7
Middle East	1,789	2,481	1,848	3,602	2,057	4,052	2,931	4,509	42.5	11.3
Africa	910	558	983	747	1,206	686	1,502	963	24.5	40.4
Other	564	103	508	100	722	168	911	171	26.2	1.8
TOTAL	\$112,860	\$112,942	\$123,118	\$128,287	\$138,580	\$142,775	\$158,190	\$155,359	14.2%	8.8%

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

EUROPE CHEMICAL TRADE

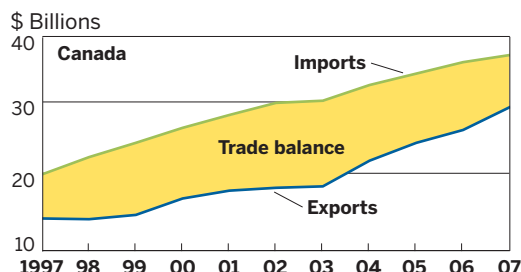
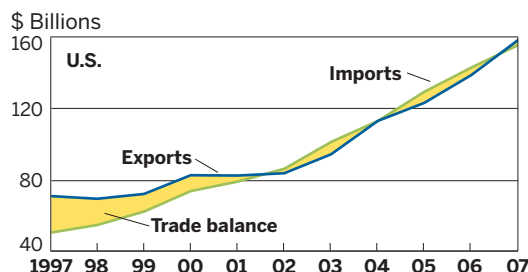
Sharp rebound in German exports paced European trade in 2007

\$ MILLIONS	2004		2005		2006		2007		CHANGE, 2006-07	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Belgium	\$102,580	\$83,856	\$114,856	\$96,735	\$125,789	\$104,938	\$136,077	\$111,248	8.2%	6.0%
France	75,545	60,656	80,110	66,255	85,877	69,568	88,281	75,063	2.8	7.9
Germany	136,239	91,634	137,695	101,724	159,114	118,867	179,973	131,139	13.1	10.3
Italy	37,273	52,214	41,289	55,830	30,041	42,250	31,139	44,856	3.7	6.2
Netherlands	60,176	39,225	65,432	44,582	72,840	49,794	82,305	56,241	13.0	12.9
Spain	21,709	33,487	24,257	35,835	27,160	37,926	29,687	40,881	9.3	7.8
U.K.	63,674	54,710	66,498	57,386	73,776	60,612	74,932	70,620	1.6	16.5

NOTE: Monetary statistics for all years were converted at the 2007 average exchange rates of \$1.00 U.S. = 0.729 euros and 0.500 pounds sterling.
SOURCES: European Chemical Industry Council, national agencies

NORTH AMERICAN CHEMICALS

The U.S. ran a chemical trade surplus for the first time since 2001, while Canada's trade deficit continued to narrow



NOTE: Canadian trade for all years was converted at the 2007 average exchange rate of \$1.00 U.S. = \$1.0734 Canadian.
SOURCES: Department of Commerce, Industry Canada, Statistics Canada

GOT A THING FOR DATA?

If you're itching to do your own calculations with all these numbers, let yourself go ... to www.cen-online.org, that is, where you can access downloadable versions of these tables, starting on July 21.

U.S. CHEMICAL TRADE, BY PRODUCT

Exports grew strongly, while imports fell in key organic chemicals and plastics categories

\$ MILLIONS	2004		2005		2006		2007		CHANGE, 2006-07	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Organic chemicals	\$26,377	\$35,212	\$26,836	\$38,140	\$30,401	\$42,301	\$34,407	\$42,238	13.2%	-0.1%
Plastics in primary form	18,512	8,654	21,458	11,078	24,444	11,969	28,458	11,440	16.4	-4.4
Medicinals & pharmaceuticals	23,982	35,105	25,952	39,039	29,109	45,957	33,464	53,688	15.0	16.8
Inorganic chemicals	6,440	8,273	7,854	10,169	9,219	11,391	10,958	13,375	18.9	17.4
Plastics in nonprimary form	7,252	5,570	7,992	6,314	8,744	6,845	9,278	6,811	6.1	-0.5
Perfume, toiletries & cleaning materials	7,745	6,951	8,409	7,926	9,495	8,332	10,645	8,870	12.1	6.5
Dyeing, tanning & coloring materials	4,690	2,669	5,018	2,970	5,461	3,055	5,906	3,116	8.1	2.0
Fertilizers	2,846	2,530	3,203	3,699	3,170	3,441	3,742	4,969	18.0	44.4
Other	15,016	7,978	16,398	8,952	18,537	9,484	21,332	10,852	15.1	14.4
TOTAL	\$112,860	\$112,942	\$123,120	\$128,287	\$138,580	\$142,775	\$158,190	\$155,359	14.2%	8.8%

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

CANADA CHEMICAL TRADE, BY PRODUCT

Canada's trade gap narrowed as exports outpaced imports

\$ MILLIONS	2004		2005		2006		2007		CHANGE, 2006-07	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Basic chemicals	\$7,473	\$8,188	\$8,732	\$8,713	\$9,447	\$9,246	\$11,485	\$9,575	21.6%	3.6%
Resins, synthetic rubber & fibers	6,379	6,233	6,946	6,843	7,197	6,761	6,891	6,336	-4.2	-6.3
Pesticides, fertilizers & other agricultural chemicals	1,311	1,383	1,555	1,415	1,457	1,438	1,563	1,623	7.3	12.8
Pharmaceuticals & medicine	3,737	8,909	4,040	9,345	5,070	10,418	6,337	11,247	25.0	8.0
Other chemical products	3,725	8,424	3,751	8,519	3,785	8,576	3,839	8,600	1.4	0.3
TOTAL	\$22,624	\$33,136	\$25,024	\$34,834	\$26,956	\$36,439	\$30,116	\$37,382	11.7%	2.6%
TOTAL WITH U.S.	\$18,334	\$22,159	\$19,916	\$22,758	\$21,171	\$22,881	\$21,811	\$22,480	3.0%	-1.8%
U.S. SHARE	81.0%	66.9%	79.6%	65.3%	78.5%	62.8%	72.4%	60.1%		

NOTE: Monetary statistics for all years were converted at the 2007 average exchange rate of \$1.00 U.S. = \$1.0734 Canadian. Totals may not sum because of rounding. SOURCES: Statistics Canada, Industry Canada

ASIA CHEMICAL TRADE, BY PRODUCT

South Korea's petrochemical exports grew nearly 20%

\$ MILLIONS	2004		2005		2006		2007		CHANGE, 2006-07	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
JAPAN										
Organic chemicals	\$16,508	\$10,710	\$17,883	\$11,489	\$18,589	\$12,260	\$20,751	\$13,024	11.6%	6.2%
Inorganic chemicals	2,708	4,339	2,954	4,754	3,444	5,522	4,101	6,967	19.1	26.2
Synthetic resins	15,385	7,518	17,428	8,566	19,637	9,433	22,047	10,183	12.3	8.0
Photographic materials	4,605	325	4,681	319	4,703	365	4,684	406	-0.4	11.2
Fertilizers	103	642	110	711	105	728	130	787	23.8	8.1
Dyes & pigments	2,996	1,037	3,135	1,084	3,384	1,163	3,621	1,264	7.0	8.7
Cosmetics	928	2,121	977	2,129	1,025	2,002	1,114	2,160	8.7	7.9
Rubber	7,875	2,834	8,584	3,219	9,243	4,099	10,450	4,268	13.1	4.1
Other	11,412	11,434	12,405	12,964	14,101	13,785	15,902	15,395	12.8	11.7
TOTAL	\$62,520	\$40,960	\$68,157	\$45,235	\$74,231	\$49,357	\$82,800	\$54,454	11.5%	10.3%
SOUTH KOREA										
Chemicals & chemical products	\$23,126	\$20,655	\$27,745	\$24,502	\$31,806	\$27,573	\$37,545	\$32,433	18.0%	17.6%
Petrochemicals (a)	17,015	8,015	20,811	9,507	24,099	10,388	28,824	11,624	19.6	11.9

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

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

CHINA CHEMICAL TRADE, BY PRODUCT

Exports of fertilizers soared while imports of inorganics stayed flat

\$ MILLIONS	2004		2005		2006		2007		CHANGE, 2006-07	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Inorganic chemicals	\$4,840	\$3,961	\$6,944	\$4,812	\$7,626	\$6,287	\$9,678	\$6,426	26.9%	2.2%
Organic chemicals	9,092	23,846	12,133	28,019	15,542	29,859	20,608	38,377	32.6	28.5
Pharmaceutical products	1,100	1,572	1,364	1,959	1,531	2,394	2,052	3,458	34.0	44.4
Fertilizers	1,309	2,288	1,011	3,051	1,169	2,484	3,741	2,906	220.0	17.0
Dyes & pigments	1,927	2,975	2,487	3,081	3,000	3,507	3,578	3,805	19.3	8.5
Other (a)	6,312	7,960	7,914	9,661	8,884	11,653	11,458	13,551	29.0	16.3
TOTAL	\$24,580	\$42,602	\$31,853	\$50,583	\$37,752	\$56,184	\$51,115	\$68,523	35.4%	22.0%

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 swings to the black as organics deficit narrows and plastics exports boom

\$ MILLIONS	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Organic chemicals	-\$86	-\$3,119	-\$6,106	-\$9,632	-\$12,680	-\$13,373	-\$12,425	-\$8,835	-\$11,304	-\$11,900	-\$7,831
Plastics in primary form	7,220	6,476	6,330	7,439	7,189	7,471	7,761	9,858	10,380	12,475	17,018
Medicinals & pharmaceuticals	-507	-1,224	-2,295	-1,572	-3,203	-8,570	-12,307	-11,123	-13,087	-16,848	-20,224
Inorganic chemicals	292	-276	-472	-582	-463	-406	-1,663	-1,833	-2,315	-2,172	-2,417
Plastics in nonprimary form	2,114	1,834	1,529	1,983	1,715	1,656	1,710	1,682	1,678	1,899	2,467
Perfume, toiletries & cleaning materials	2,343	1,995	1,863	2,005	2,278	1,940	1,246	794	483	1,163	1,775
Dyeing, tanning & coloring materials	869	1,058	1,055	1,529	1,399	1,619	1,801	2,021	2,048	2,406	2,790
Fertilizers	1,696	1,714	1,618	796	357	643	422	316	-496	-271	-1,227
Other	6,560	6,132	6,261	6,944	6,857	6,556	6,558	7,038	7,446	9,053	10,480
TOTAL	\$20,501	\$14,590	\$9,783	\$8,910	\$3,449	-\$2,464	-\$6,897	-\$82	-\$5,167	-\$4,195	\$2,831

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

CANADA CHEMICAL TRADE BALANCE, BY PRODUCT

The chemical trade deficit shrank by more than \$2 billion in 2007

\$ MILLIONS	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Basic chemicals	-\$785	-\$1,406	-\$1,744	-\$939	-\$1,175	-\$1,105	-\$1,313	-\$714	\$20	\$200	\$1,910
Resins, synthetic rubber & fibers	-78	-541	-652	-347	-54	-389	-218	146	102	436	555
Pesticides, fertilizers & other agricultural chemicals	-107	-385	-125	-168	-324	-235	-353	-72	140	20	-60
Pharmaceuticals & medicine	-1,836	-2,454	-3,172	-3,828	-4,413	-5,142	-5,257	-5,171	-5,305	-5,348	-4,911
Other chemical products	-3,342	-3,948	-4,367	-4,557	-4,505	-4,977	-4,860	-4,699	-4,768	-4,790	-4,761
TOTAL	-\$6,150	-\$8,734	-\$10,061	-\$9,839	-\$10,471	-\$11,847	-\$12,001	-\$10,511	-\$9,810	-\$9,484	-\$7,267

NOTE: Monetary statistics for all years were converted at the 2007 average exchange rate of \$1.00 U.S. = \$1.0734 Canadian. Totals may not sum because of rounding. SOURCE: Industry Canada, Statistics Canada

EUROPE CHEMICAL TRADE BALANCE

U.K.'s chemical trade surplus dropped sharply in 2007

\$ MILLIONS	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Belgium	\$11,747	\$10,053	\$12,895	\$14,779	\$13,383	\$16,747	\$17,841	\$18,716	\$18,112	\$20,841	\$24,817
France	10,372	10,294	11,817	12,005	13,548	13,902	13,855	14,882	13,848	16,301	13,212
Germany	34,723	29,937	29,007	32,760	32,993	32,140	37,646	41,023	41,819	40,228	48,811
Italy	-11,050	-13,734	-11,702	-12,278	-11,214	-11,427	-13,389	-14,934	-14,534	-16,316	-13,711
Netherlands	12,496	11,985	12,533	16,413	16,631	18,255	18,946	20,941	20,841	23,034	26,051
Spain	-7,711	-8,587	-8,569	-8,787	-9,245	-10,227	-11,216	-11,772	-11,573	-10,760	-11,188
U.K.	9,207	10,259	10,168	10,375	11,442	10,767	11,057	8,973	9,121	13,177	4,316

NOTE: Monetary statistics for all years were converted at the 2007 average exchange rates of \$1.00 U.S. = 0.729 euros and 0.500 pounds sterling. SOURCES: European Chemical Industry Council, national agencies