

For Wire Transmission 10:00 a.m. ET November 7, 2002

CB02-146

**MONTHLY WHOLESALE TRADE: SALES AND INVENTORIES  
SEPTEMBER 2002**

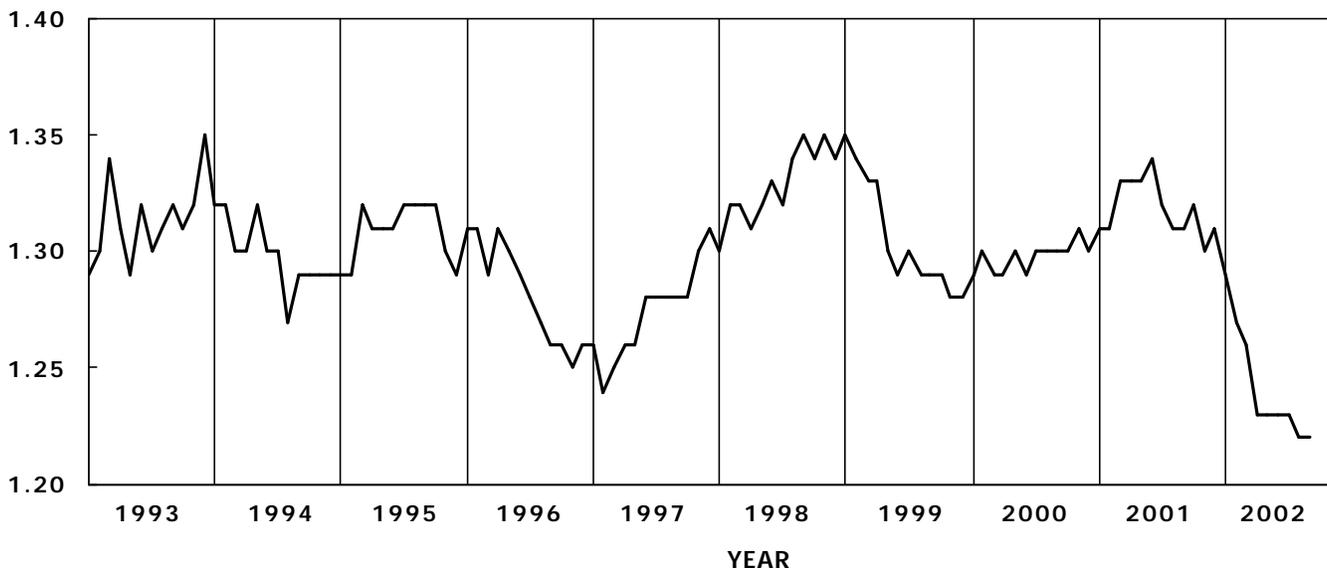
**Sales.** September 2002 sales of merchant wholesalers, after adjustment for seasonal variations and trading-day differences but not for price changes, were \$233.4 billion, up 0.1 percent (+/-0.6%) from the revised August level, and were up 3.7 percent (+/-1.0%) from the September 2001 level. The August preliminary estimate was revised downward \$0.2 billion or 0.1 percent. Among durable goods, sales of machinery, equipment, and supplies were up 3.3 percent from last month and professional and commercial equipment and supplies were up 3.2 percent. Among nondurable goods, sales of chemicals and allied products increased 2.4 percent, while sales of beer, wine, and distilled alcoholic beverages decreased 2.4 percent.

**Inventories.** Total inventories of merchant wholesalers, after adjustment for seasonal variations but not for price changes, were \$285.7 billion at the end of September, up 0.5 percent (+/-0.3%) from last month, but were down 3.4 percent (+/-0.9%) from a year ago. The August preliminary estimate was revised downward \$0.2 billion or 0.1 percent. Among durable goods, inventories of motor vehicle and motor vehicle parts and supplies were up 2.7 percent from last month, while computer and computer peripheral equipment and software decreased 2.4 percent. End-of-month inventories of nondurable goods increased 0.9 percent (+/-0.5%) from last month and were up 0.5 percent (+/-1.7%) from last year. Compared to last month, inventories of petroleum and petroleum products increased 4.2 percent and inventories of beer, wine, and distilled alcoholic beverages increased 2.3 percent.

**Inventories/Sales Ratio.** The September inventories/sales ratio for merchant wholesalers, based on seasonally adjusted data, was 1.22. The September 2001 ratio was 1.31.

*Data in this report are based on a sample and, therefore, are subject to sampling and nonsampling error. A discussion of the reliability of the estimates and general survey methodology appears in BW/01-A Current Business Reports.*

**RATIO**  
**Monthly Inventories/Sales Ratios of Merchant Wholesalers: 1993 to 2002**  
(Estimates adjusted for seasonal and trading-day differences, but not for price changes)



**Monthly Wholesale Trade for October is scheduled to be released December 10, 2002 at 10:00 a.m.**

Address inquiries concerning this report to Service Sector Statistics Division, U.S. Census Bureau, Washington, DC 20233, or call Nancy Piesto, (301) 763-2747.

This report is available on day of issue through the Department of Commerce's STAT-USA website; for information, call (202) 482-1986. The data are also available on the internet - <http://www.census.gov/whl>.

**Table 1. Estimated Monthly Sales, Inventories, and Inventories/Sales Ratios of Merchant Wholesalers**

[Total sales and inventory estimates are shown in millions of dollars. Estimates are based on data from the Monthly Wholesale Trade Survey, Annual Wholesale Trade Survey, and administrative records. Except for NAICS code 4225, estimates have been adjusted using results of the most recent economic census.]

NAICS <sup>1</sup> code	Kind of Business	Sales						Inventories						Inventories/Sales Ratios		
		Monthly			Percent change			Monthly			Percent change			Ratios		
		Sep. 2002 (p)	Aug. 2002 (r)	Sep. 2001 (r)	Sep./Aug.	Aug./Jul.	Sep. 02 Sep. 01	Sep. 2002 (p)	Aug. 2002 (r)	Sep. 2001 (r)	Sep./Aug.	Aug./Jul.	Sep. 02 Sep. 01	Sep. 2002 (p)	Aug. 2002 (r)	Sep. 2001 (r)
<b>Adjusted<sup>2</sup></b>																
<b>42</b>	<b>U.S. Total</b>	<b>233,435</b>	<b>233,314</b>	<b>225,166</b>	<b>0.1</b>	<b>0.8</b>	<b>3.7</b>	<b>285,716</b>	<b>284,348</b>	<b>295,766</b>	<b>0.5</b>	<b>0.1</b>	<b>-3.4</b>	<b>1.22</b>	<b>1.22</b>	<b>1.31</b>
<b>421</b>	<b>Durable</b>	<b>115,141</b>	<b>114,698</b>	<b>112,277</b>	<b>0.4</b>	<b>0.1</b>	<b>2.6</b>	<b>169,855</b>	<b>169,515</b>	<b>180,485</b>	<b>0.2</b>	<b>0.1</b>	<b>-5.9</b>	<b>1.48</b>	<b>1.48</b>	<b>1.61</b>
4211	Automotive	18,156	18,350	16,454	-1.1	3.8	10.3	23,996	23,360	24,641	2.7	-2.4	-2.6	1.32	1.27	1.50
4212	Furniture	3,443	3,482	3,491	-1.1	-1.9	-1.4	5,227	5,228	5,489	0.0	0.4	-4.8	1.52	1.50	1.57
4213	Lumber	6,796	6,633	6,169	2.5	3.1	10.2	6,739	6,716	6,707	0.3	0.4	0.5	0.99	1.01	1.09
4214	Prof. equip.	22,708	22,006	21,627	3.2	1.7	5.0	23,316	23,572	24,363	-1.1	1.2	-4.3	1.03	1.07	1.13
42143	Comp. equip.	12,067	11,829	11,858	2.0	0.9	1.8	8,305	8,513	8,977	-2.4	0.8	-7.5	0.69	0.72	0.76
4215	Metals	7,572	7,704	7,690	-1.7	-2.1	-1.5	12,881	12,600	12,759	2.2	1.9	1.0	1.70	1.64	1.66
4216	Electrical	17,366	17,453	16,805	-0.5	-1.6	3.3	23,671	23,639	26,220	0.1	2.1	-9.7	1.36	1.35	1.56
4217	Hardware	5,378	5,426	5,263	-0.9	0.6	2.2	10,049	10,017	10,477	0.3	-0.5	-4.1	1.87	1.85	1.99
4218	Machinery	20,496	19,837	21,944	3.3	-2.4	-6.6	44,590	44,962	49,194	-0.8	-0.9	-9.4	2.18	2.27	2.24
4219	Misc. Durable	13,226	13,807	12,834	-4.2	-0.9	3.1	19,386	19,421	20,635	-0.2	0.5	-6.1	1.47	1.41	1.61
<b>422</b>	<b>Nondurable</b>	<b>118,294</b>	<b>118,616</b>	<b>112,889</b>	<b>-0.3</b>	<b>1.6</b>	<b>4.8</b>	<b>115,861</b>	<b>114,833</b>	<b>115,281</b>	<b>0.9</b>	<b>0.1</b>	<b>0.5</b>	<b>0.98</b>	<b>0.97</b>	<b>1.02</b>
4221	Paper	6,231	6,229	6,010	0.0	-1.0	3.7	6,029	6,033	6,510	-0.1	-0.4	-7.4	0.97	0.97	1.08
4222	Drugs	18,967	18,726	16,998	1.3	0.9	11.6	27,487	27,012	27,277	1.8	-0.4	0.8	1.45	1.44	1.60
4223	Apparel	6,997	7,168	6,592	-2.4	0.6	6.1	13,030	12,776	13,317	2.0	2.6	-2.2	1.86	1.78	2.02
4224	Groceries	35,398	35,595	33,823	-0.6	0.8	4.7	22,415	22,555	21,448	-0.6	0.9	4.5	0.63	0.63	0.63
4225	Farm products	9,485	9,282	8,542	2.2	3.1	11.0	10,109	10,232	10,550	-1.2	-1.1	-4.2	1.07	1.10	1.24
4226	Chemicals	5,273	5,148	4,820	2.4	2.2	9.4	6,134	6,062	6,180	1.2	2.5	-0.7	1.16	1.18	1.28
4227	Petroleum	15,780	15,505	15,395	1.8	4.9	2.5	4,736	4,546	4,117	4.2	-1.1	15.0	0.30	0.29	0.27
4228	Alcohol	6,432	6,590	5,808	-2.4	0.0	10.7	6,721	6,568	6,417	2.3	-1.6	4.7	1.04	1.00	1.10
4229	Misc. Nondur.	13,731	14,373	14,901	-4.5	2.2	-7.9	19,200	19,049	19,465	0.8	-0.4	-1.4	1.40	1.33	1.31
<b>Not Adjusted</b>																
<b>Sales to date</b>																
														<b>2002</b>		<b>2001</b>
<b>42</b>	<b>U.S. Total</b>	<b>231,835</b>	<b>238,629</b>	<b>217,820</b>	<b>-2.8</b>	<b>1.5</b>	<b>6.4</b>	<b>283,132</b>	<b>280,530</b>	<b>292,709</b>	<b>0.9</b>	<b>-0.7</b>	<b>-3.3</b>	<b>2,049,279</b>	<b>2,044,149</b>	
<b>421</b>	<b>Durable</b>	<b>116,257</b>	<b>118,339</b>	<b>110,299</b>	<b>-1.8</b>	<b>1.3</b>	<b>5.4</b>	<b>169,658</b>	<b>170,227</b>	<b>180,116</b>	<b>-0.3</b>	<b>-0.7</b>	<b>-5.8</b>	<b>1,019,395</b>	<b>1,035,831</b>	
4211	Automotive	17,303	18,735	15,434	-7.6	4.3	12.1	23,708	22,519	24,296	5.3	-4.8	-2.4	157,707	152,575	
4212	Furniture	3,543	3,694	3,460	-4.1	4.3	2.4	5,405	5,395	5,676	0.2	0.0	-4.8	31,469	32,653	
4213	Lumber	6,796	7,270	6,002	-6.5	3.2	13.2	6,739	6,743	6,700	-0.1	-0.7	0.6	61,165	55,516	
4214	Prof. equip.	24,161	22,358	22,319	8.1	1.6	8.3	23,246	23,690	24,241	-1.9	0.6	-4.1	194,228	200,927	
42143	Comp. equip.	13,346	12,172	12,712	9.6	3.7	5.0	8,230	8,522	8,878	-3.4	-0.6	-7.3	103,085	110,608	
4215	Metals	7,527	8,081	7,429	-6.9	0.3	1.3	12,971	12,676	12,797	2.3	0.8	1.4	68,207	71,843	
4216	Electrical	17,991	17,994	17,023	0.0	-0.2	5.7	23,908	24,088	26,456	-0.7	2.3	-9.6	156,924	160,061	
4217	Hardware	5,260	5,686	5,026	-7.5	1.6	4.7	10,059	10,127	10,456	-0.7	-0.6	-3.8	48,994	47,347	
4218	Machinery	20,066	19,996	20,605	0.4	-2.8	-2.6	44,100	45,277	48,653	-2.6	-2.3	-9.4	181,184	196,166	
4219	Misc. Durable	13,610	14,525	13,001	-6.3	4.0	4.7	19,522	19,712	20,841	-1.0	1.3	-6.3	119,517	118,743	
<b>422</b>	<b>Nondurable</b>	<b>115,578</b>	<b>120,290</b>	<b>107,521</b>	<b>-3.9</b>	<b>1.7</b>	<b>7.5</b>	<b>113,474</b>	<b>110,303</b>	<b>112,593</b>	<b>2.9</b>	<b>-0.5</b>	<b>0.8</b>	<b>1,029,884</b>	<b>1,008,318</b>	
4221	Paper	6,300	6,522	5,914	-3.4	1.4	6.5	5,981	5,949	6,451	0.5	-1.2	-7.3	55,710	58,009	
4222	Drugs	18,607	18,089	16,046	2.9	-1.2	16.0	27,102	25,553	26,868	6.1	-4.5	0.9	163,732	139,662	
4223	Apparel	7,221	7,899	6,770	-8.6	6.0	6.7	13,382	13,210	13,637	1.3	2.7	-1.9	63,617	61,390	
4224	Groceries	34,442	36,556	32,267	-5.8	-0.5	6.7	22,639	22,510	21,620	0.6	2.1	4.7	313,289	299,761	
4225	Farm products	8,774	8,521	7,688	3.0	0.6	14.1	8,198	7,674	8,556	6.8	-1.5	-4.2	76,754	78,546	
4226	Chemicals	5,099	5,328	4,536	-4.3	2.5	12.4	6,067	6,062	6,100	0.1	1.4	-0.5	45,747	45,016	
4227	Petroleum	15,559	16,017	14,733	-2.9	7.2	5.6	4,731	4,510	4,117	4.9	-1.3	14.9	129,245	139,616	
4228	Alcohol	6,078	6,999	5,396	-13.2	1.8	12.6	6,923	6,529	6,616	6.0	-3.8	4.6	56,696	52,793	
4229	Misc. Nondur.	13,498	14,359	14,171	-6.0	3.2	-4.7	18,451	18,306	18,628	0.8	1.1	-1.0	125,094	133,525	

<sup>p</sup> Preliminary estimate. <sup>r</sup> Revised.

<sup>1</sup> For a full description of the NAICS codes used in this table, see <http://www.census.gov/svsd/www/naicsdef.html>.

<sup>2</sup> Estimates are adjusted for seasonal variations and, in the case of sales, also for trading-day differences. See Table 3 for the seasonal adjustment factors used. Cumulative seasonally adjusted sales estimates are not tabulated.

Note: Estimates have not been adjusted for price changes. Table 2 provides estimated measures of sampling variability. Additional information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions may be found at <http://www.census.gov/svsd/www/mwtsreliability.html>.

**Table 2. Coefficients of Variation and Standard Errors for Sales and Inventories Estimates**

[Estimates are shown as percents. Estimates are based on data from the Monthly Wholesale Trade Survey and administrative records.]

NAICS code	Kind of Business	Median coefficients of variation for level (%)				Median standard errors for trend				Coefficients of variation for level (%)		Standard errors for trend
		Preliminary estimates		Final estimates		Ratio of two consecutive months		Year-to-year estimates		Cumulative sales estimates		Current year cumulative
		Sales	Inv.	Sales	Inv.	Sales	Inv.	Sales	Inv.	Current year	Previous year	to previous year cumulative
<b>42</b>	<b>U.S. Total</b>	1.2	1.6	1.2	1.6	0.4	0.2	0.6	0.6	1.2	1.3	0.3
<b>421</b>	<b>Durable</b>	1.5	1.5	1.5	1.6	0.5	0.2	1.1	0.7	1.4	1.7	0.6
4211	Automotive	3.3	4.5	3.4	4.5	0.9	0.8	1.4	2.0	3.2	3.8	0.9
4212	Furniture	4.6	7.3	4.6	7.3	1.5	0.7	3.0	1.9	4.5	4.0	2.3
4213	Lumber	4.5	6.3	4.5	6.3	1.0	0.6	2.5	2.8	4.6	3.8	1.7
4214	Prof. equip.	5.0	6.2	4.9	6.1	1.1	0.6	2.5	1.8	4.8	4.0	1.6
42143	Comp. equip.	8.4	6.7	7.9	6.7	2.0	1.1	3.2	3.5	8.6	7.2	2.6
4215	Metals	7.6	8.9	7.6	8.8	1.3	0.7	3.0	3.7	7.1	6.9	2.3
4216	Electrical	3.7	4.9	3.8	4.8	1.3	0.6	1.8	1.7	3.4	3.9	0.8
4217	Hardware	8.0	10.9	8.2	10.8	1.1	0.5	2.4	2.2	8.0	7.8	1.5
4218	Machinery	4.0	3.1	4.1	3.1	1.7	0.5	2.3	1.4	3.5	3.3	1.1
4219	Misc. Durable	5.0	7.7	5.1	7.6	1.8	0.8	2.9	2.4	4.7	5.5	2.1
<b>422</b>	<b>Nondurable</b>	1.7	2.6	1.6	2.6	0.5	0.3	1.0	1.0	1.8	1.5	0.5
4221	Paper	4.4	3.4	4.4	3.5	0.9	0.6	1.2	1.5	4.2	4.7	0.6
4222	Drugs	5.3	5.5	5.2	5.5	0.9	0.4	2.3	2.8	5.3	5.8	1.3
4223	Apparel	5.0	4.8	5.0	4.8	1.8	0.9	3.0	2.6	4.5	4.2	2.1
4224	Groceries	3.1	5.8	3.1	5.8	0.7	0.7	1.6	2.0	3.3	2.8	1.0
4225	Farm products	5.8	10.8	5.7	11.3	1.8	1.7	2.8	3.1	5.7	5.5	1.3
4226	Chemicals	5.3	7.1	5.3	7.1	1.0	0.7	1.9	1.9	5.2	4.9	1.2
4227	Petroleum	5.7	6.8	5.8	7.3	0.7	0.8	1.4	2.0	5.8	5.5	0.9
4228	Alcohol	4.0	5.2	4.0	4.9	0.9	0.7	1.5	1.7	4.0	4.0	0.7
4229	Misc. Nondur.	7.8	8.0	7.8	7.9	2.0	1.2	4.1	1.9	7.5	6.9	2.7

Note: Estimated measures of sampling variability are based on estimates unadjusted for seasonal variation or trading-day differences. Medians are computed using final monthly estimates for the latest 12 months. Additional information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions may be found at [www.census.gov/svsd/www/mwtsreliability.html](http://www.census.gov/svsd/www/mwtsreliability.html).

### Reliability of Estimates

There are two types of errors possible in an estimate based on a sample survey: sampling and nonsampling.

Sampling errors occur because observations are made on a sample, not on the entire population, and different samples could have led to different estimates. Standard errors and coefficients of variation, as calculated for this report, are measures of sampling variation. The margin of sampling error, as used on page 1, gives a range about the estimate which is a 90% confidence interval. If, for example, the percent change estimate is up 1.2% and the standard error is 0.9%, then the margin of sampling error is  $\pm 1.65 \times 0.9\%$  or  $\pm 1.5\%$ , and the 90% confidence interval is  $-0.3\%$  to  $+2.7\%$ . If the interval contains zero, then we do not have sufficient evidence to conclude the estimated change was statistically different from zero. For monthly totals, the coefficient of variation (CV) is given. The resulting confidence interval is the estimated value  $\pm 1.65 \times CV \times$  (the estimated value).

Nonsampling errors can occur because of nonresponse, insufficient coverage of the universe of wholesale businesses, mistakes in the recording and coding of data, and response errors. Imputed data accounts for approximately 28% of the sales estimates and 31% of the inventories estimates. Additionally, estimates of sales and inventories prior to March 2001 have been restated from SIC-based estimates. The restatement methodology may have introduced additional nonsampling error. The calculated median standard errors of year-to-year change estimates may also be influenced by the methodology used to impute historical data for units in the NAICS sample. The effect of this historic imputation methodology on published estimates will decrease as more data from the NAICS sample is accumulated. Precautionary steps are taken to minimize nonsampling errors, but their magnitude is not directly measured.

Further information regarding the reliability of estimates can be found on the Internet on our web page at <http://www.census.gov/svsd/www/mwtsreliability.html>.

**Table 3. Seasonal Adjustment Factors for Sales and Inventories of Merchant Wholesalers**

[Seasonal adjustment factors are computed using the Census Bureau's X-12 ARIMA program and are based on data from the Monthly Wholesale Trade Survey, Annual Wholesale Trade Survey, and administrative records.]

NAICS code	Kind of Business	Sales						Inventories					
		2002					2001	2002					2001
		Oct.	Sep.r	Aug.r	Jul.	Jun.	Sep.r	Oct.	Sep.r	Aug.r	Jul.	Jun.	Sep.r
<b>42</b>	<b>U.S. Total</b> <sup>1</sup>	<b>1.075</b>	<b>0.996</b>	<b>1.023</b>	<b>1.016</b>	<b>0.988</b>	<b>0.971</b>	<b>1.013</b>	<b>0.987</b>	<b>0.984</b>	<b>0.994</b>	<b>0.989</b>	<b>0.986</b>
<b>421</b>	<b>Durable</b>	<b>1.083</b>	<b>1.011</b>	<b>1.031</b>	<b>1.020</b>	<b>1.003</b>	<b>0.985</b>	<b>1.000</b>	<b>0.997</b>	<b>1.002</b>	<b>1.012</b>	<b>1.002</b>	<b>0.996</b>
4211	Automotive	1.068	0.953	1.021	1.016	1.001	0.938	1.004	0.988	0.964	0.988	0.982	0.986
4212	Furniture	1.109	1.029	1.061	0.998	0.974	0.991	1.024	1.034	1.032	1.036	1.006	1.034
4213	Lumber	1.097	1.000	1.096	1.095	1.049	0.973	0.977	1.000	1.004	1.016	1.023	0.999
4214	Prof. equip.	1.057	1.064	1.016	1.017	1.017	1.032	1.019	0.997	1.005	1.011	0.991	0.995
42143	Comp. equip.	1.071	1.106	1.029	1.002	1.035	1.072	1.028	0.991	1.001	1.015	0.988	0.989
4215	Metals	1.067	0.994	1.049	1.024	0.997	0.966	0.999	1.007	1.006	1.017	1.001	1.003
4216	Electrical	1.107	1.036	1.031	1.016	0.978	1.013	1.001	1.010	1.019	1.016	1.004	1.009
4217	Hardware	1.097	0.978	1.048	1.038	1.021	0.955	0.985	1.001	1.011	1.012	1.011	0.998
4218	Machinery	1.062	0.979	1.008	1.013	0.999	0.939	0.987	0.989	1.007	1.021	1.015	0.989
4219	Misc. Durable	1.123	1.029	1.052	1.002	0.986	1.013	1.007	1.007	1.015	1.007	1.002	1.010
<b>422</b>	<b>Nondurable</b>	<b>1.069</b>	<b>0.978</b>	<b>1.014</b>	<b>1.013</b>	<b>0.974</b>	<b>0.956</b>	<b>1.032</b>	<b>0.976</b>	<b>0.958</b>	<b>0.965</b>	<b>0.967</b>	<b>0.974</b>
4221	Paper	1.091	1.011	1.047	1.022	0.970	0.984	1.007	0.992	0.986	0.994	1.000	0.991
4222	Drugs	1.086	0.981	0.966	0.986	0.947	0.944	1.017	0.986	0.946	0.986	0.985	0.985
4223	Apparel	1.163	1.032	1.102	1.046	0.954	1.027	1.001	1.027	1.034	1.033	1.019	1.024
4224	Groceries	1.041	0.973	1.027	1.040	0.986	0.954	1.037	1.010	0.998	0.986	0.997	1.008
4225	Farm products	1.159	0.925	0.918	0.940	0.895	0.900	1.156	0.811	0.750	0.753	0.767	0.811
4226	Chemicals	1.064	0.967	1.035	1.032	1.004	0.941	0.983	0.989	1.000	1.011	1.008	0.987
4227	Petroleum	1.034	0.986	1.033	1.011	0.972	0.957	1.015	0.999	0.992	0.994	0.975	1.000
4228	Alcohol	1.094	0.945	1.062	1.043	1.026	0.929	1.067	1.030	0.994	1.017	1.015	1.031
4229	Misc. Nondur.	1.015	0.983	0.999	0.990	1.014	0.951	1.002	0.961	0.961	0.946	0.942	0.957

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<sup>1</sup>Adjusted sales and inventory estimates for detailed kind-of business levels in Table 1 are computed by dividing each unadjusted estimate by the seasonal adjustment factor for the corresponding kind of business and month. Adjusted estimates for broad kind-of-business levels are obtained by summing adjusted estimates at the appropriate detailed levels. Seasonal factors shown for broad kind-of-business levels may be used to approximate adjusted estimates at these levels, but the resulting estimates may differ slightly from the published estimates.

Note: The seasonal adjustment factors shown are estimates derived from a model that uses sample survey data as input. Therefore, these estimates may contain model error, sampling error, and nonsampling error. Additional information on the general form of the model and the X-12 ARIMA program may be found at <http://www.census.gov/srd/www/x12a/>.