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# **MONTHLY WHOLESALE TRADE: SALES AND INVENTORIES, AUGUST 2018**

Release Number: CB18-159

**October 10, 2018** — The U.S. Census Bureau announced the following new wholesale trade statistics for August 2018:





### Sales

August 2018 sales of merchant wholesalers, except manufacturers' sales branches and offices, after adjustment for seasonal variations and trading-day differences but not for price changes, were \$511.1 billion, up 0.8 percent ( $\pm$ 0.4 percent) from the revised July level and were up 9.2 percent ( $\pm$ 3.5 percent) from the August 2017 level. The June 2018 to July 2018 percent change was revised from the preliminary estimate of virtually unchanged ( $\pm$ 0.2 percent)\* to up 0.2 percent ( $\pm$ 0.4 percent)\*.

#### **Inventories**

Total inventories of merchant wholesalers, except manufacturers' sales branches and offices, after adjustment for seasonal variations but not for price changes, were \$642.7 billion at the end of August, up 1.0 percent ( $\pm 0.2$  percent) from the revised July level. Total inventories were up 5.3 percent ( $\pm 3.7$  percent) from the revised August 2017 level. The July 2018 to August 2018 percent change was revised from the advance estimate of up 0.8 percent ( $\pm 0.2$  percent) to up 1.0 percent ( $\pm 0.2$  percent).

### **Inventories/Sales Ratio**

The August inventories/sales ratio for merchant wholesalers, except manufacturers' sales branches and offices, based on seasonally adjusted data, was 1.26. The August 2017 ratio was 1.30.

### **General Information**

The September 2018 Monthly Wholesale Trade Report is scheduled for release on November 9, 2018. View the full schedule in the Economic Briefing Room: <a href="https://www.census.gov/economic-indicators/">www.census.gov/economic-indicators/</a>>.

#### **Data Inquiries**

Economic Indicators Division, Wholesale Indicator Branch 301-763-6856 William Abriatis / Nicole Davis eid.wholesale.indicator.branch@census.gov





For additional survey information, including customizable time series estimates by industry, visit <www.census.gov/wholesale/>.

# **EXPLANATORY NOTES**

# **Reliability of the Estimates**

Because the estimates presented in this report are based on a sample survey, they contain sampling error and nonsampling error.

Sampling error is the difference between the estimate and the result that would be obtained from a complete enumeration of the sampling frame conducted under the same survey conditions. This error occurs because only a subset of the entire sampling frame is measured in a sample survey. Standard errors and coefficients of variation, as given in Table 2 of this report, are estimated measures of sampling variation.

The margin of sampling error, as used on page 1, gives a range about the estimate, which can be used to construct a 90-percent confidence interval. If, for example, the percent change estimate is  $\pm 1.2$  percent and its estimated standard error is 0.8 percent, then the margin of sampling error is  $\pm 1.753 \times 0.8$  percent or  $\pm 1.4$  percent, and the 90 percent confidence interval is  $1.2 \pm 1.4$  or  $\pm 1.4$  or  $\pm 1.4$  or  $\pm 1.4$  or  $\pm 1.4$  percent. If the interval contains 0, then one does not have sufficient statistical evidence to conclude at the 90 percent confidence level that the actual change is different from zero. Estimated changes shown in the text are statistically significant unless otherwise noted. For a monthly total, the estimated coefficient of variation is given. The resulting confidence interval is the estimated monthly total  $\pm 1.753 \times \text{CV} \times \text{(the estimated monthly total)}$ . The Census Bureau recommends that individuals using estimates in this report incorporate this information into their analyses, as sampling error could affect the conclusions drawn from the estimates.

Nonsampling error encompasses all other factors that contribute to the total error of a sample survey estimate. This type of error can occur because of nonresponse, insufficient coverage of the universe of wholesale businesses, mistakes in the recording and coding of data, model error, and other errors of collection, response, coverage, or processing. Although nonsampling error is not measured directly, the Census Bureau employs quality control procedures throughout the process to minimize this type of error.

# **Description of the Survey**

The Census Bureau conducts the Monthly Wholesale Trade Survey to provide national estimates of monthly sales, end-of-month inventories, and inventories-to-sales ratios by kind of business for wholesale firms located in the United States. Specifically, the MWTS covers wholesale merchants who sell goods on their own account and include such businesses as wholesale merchants or jobbers, industrial distributors, exporters, and importers. Sales offices and branches maintained by manufacturing, refining, or mining firms for the purpose of marketing their products are not covered in this report. Also excluded is NAICS Industry Group 4251: Wholesale Electronic Markets and Agents and Brokers.

The MWTS sample was selected using a stratified, one-stage design with strata defined by kind of business (e.g., Automotive, Furniture, Lumber, etc.) and annual sales size. The sample includes firms of all sizes and is

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updated on a quarterly basis to account for new wholesale firms, deaths, and other changes to the wholesale universe. Each month, questionnaires are mailed to employer firms selected in a probability sample of approximately 4,200. For surveyed companies, approximately 62.3 percent provided data for this reporting period, resulting in a total quantity response rate of 65.7 percent for sales and 65.7 percent for inventories.

Monthly sales and inventories estimates are obtained by summing weighted data (either reported or imputed). The monthly estimates are benchmarked to annual survey estimates and are adjusted for seasonal variation and trading-day differences. Individuals who use estimates in this report to create new estimates should cite the Census Bureau as the source of only the original estimates. Additional information on the MWTS can be found on the Census Bureau website at: <a href="https://www.census.gov/wholesale/">www.census.gov/wholesale/</a>>.

### **RESOURCES**

## **API**

The Census Bureau's application programming interface lets developers create custom apps to reach new users and makes key demographic, socio-economic and housing statistics more accessible than ever before. <a href="https://www.census.gov/developers/">www.census.gov/developers/</a>

## **FRED Mobile App**



Receive the latest updates on the nation's key economic indicators by downloading the FRED App < <a href="https://fred.stlouisfed.org/fred-mobile/">https://fred.stlouisfed.org/fred-mobile/</a> for both Apple and Android devices. FRED, the signature database of the Federal Reserve Bank of St. Louis, now incorporates the Census Bureau's 13 economic indicators.

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\* The 90 percent confidence interval includes zero. There is insufficient evidence to conclude that the actual change is different from zero.

**Data Inquiries** 

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Table 1. Estimates of Monthly Sales, Inventories, and Inventories/Sales Ratios of Merchant Wholesalers, Except Manufacturers' Sales Branches and Offices

[Total sales and inventories estimates are shown in millions of dollars. Estimates are based on data from the Monthly Wholesale Trade Survey.]

	Kind of	Sales						Inventories <sup>4</sup>						Inventories/Sales		
NAICS <sup>1</sup>		Monthly			Percent change			Monthly			Percent change			Ratios		
code	Business	Aug. 2018 (p)	Jul. 2018 (r)	Aug. 2017 (r)	Aug./ Jul.	Jul./ Jun.	Aug. 18/ Aug. 17	Aug. 2018 (p)	Jul. 2018 (r)	Aug. 201 <i>7</i> (r)	Aug./ Jul.	Jul./ Jun.	Aug. 18/ Aug. 17	Aug. 2018 (p)	Jul. 2018 (r)	Aug. 2017 (r)
Adjusted	12	(F)	(-)	(-)				(F)	(-)	(-)				(β)	(1)	(1)
42	U.S. Total	511.138	506,874	467,917	0.8	0.2	9.2	642,706	636,339	610,597	1.0	0.6	5.3	1.26	1.26	1.30
423	.Durable	246,960	243,906	226,469	1.3			389,776	386,336	367,251	0.9	0.6	6.1	1.58	1.58	1.62
		•	·	·				·								
4231	Automotive	41,436	41,338	39,348	0.2			65,271	63,094	65,010	3.5	-1.0	0.4	1.58	1.53 1.83	1.65
4232 4233	Furniture Lumber	7,150	7,084 12,279	6,864 11,409	0.9 0.7			12,972	12,965	12,656	0.1	0.0 1.4	2.5	1.81 1.44	1.83	1.84 1.38
4233 4234	Prof. equip.	12,369 42,984	41,620	41,571	3.3	1.0 -2.4		17,803 45,774	1 <i>7</i> ,715 45,636	15,765 44,814	0.5 0.3	1.4	12.9 2.1	1.44	1.10	1.38
42343	Comp. equip.	22,826	21,486	21,764	6.2			17,182	16,916	16,475	1.6		4.3	0.75	0.79	0.76
4235	Metals	16,426	15,990	13,305	2.7	2.8		33,452	33,182	27,847	0.8		20.1	2.04	2.08	2.09
4236	Electrical	53,831	52,565	48,857	2.4			55,484	55,692	53,558	-0.4		3.6	1.03	1.06	1.10
4237	Hardware	11,959	12,305	11,429	-2.8			24,975	24,717	23,209	1.0		7.6	2.09	2.01	2.03
4238	Machinery	40,556	40,112	34,381	1.1	0.5	18.0	102,705	102,167	94,603	0.5	1.1	8.6	2.53	2.55	2.75
4239	Misc. Durable	20,249	20,613	19,305	-1.8	0.2	4.9	31,340	31,168	29,789	0.6	-1.0	5.2	1.55	1.51	1.54
424	.Nondurable	264,178	262,968	241,448	0.5	0.2	9.4	252,930	250,003	243,346	1.2	0.5	3.9	0.96	0.95	1.01
4241	Paper	8,272	8,297	8,184	-0.3	0.2	1.1	10,297	10,269	9,371	0.3	2.2	9.9	1.24	1.24	1.15
4242	Drugs	59,293	59,187	57,028	0.2	-0.4	4.0	64,432	63,095	62,013	2.1	0.8	3.9	1.09	1.07	1.09
4243	Apparel	12,358	12,095	12,798	2.2	-6.7	-3.4	26,010	25,993	26,742	0.1	0.3	-2.7	2.10	2.15	2.09
4244	Groceries	53,536	53,200	54,009	0.6	0.8	-0.9	37,312	37,577	38,348	-0.7	-0.8	-2.7	0.70	0.71	0.71
4245	Farm products	19,669	19,999	17,297	-1.7	-2.6	13.7	27,821	26,510	22,760	4.9	2.1	22.2	1.41	1.33	1.32
4246	Chemicals <sup>3</sup>	11,156	11,278	10,083	-1.1	1.2	10.6	13,029	12,751	11,974	2.2	1.4	8.8	1.17	1.13	1.19
4247	Petroleum	64,599	63,936	47,572	1.0	0.6	35.8	23,903	23,779	22,026	0.5	-1.1	8.5	0.37	0.37	0.46
4248	Alcohol	13,051	13,095	12,396	-0.3			16,825	16,741	16,823	0.5	1.1	0.0	1.29	1.28	1.36
4249	Misc. Nondur.	22,244	21,881	22,081	1.7	4.9	0.7	33,301	33,288	33,289	0.0	0.6	0.0	1.50	1.52	1.51
Not Adjusted															les to da	
40														2018		2017
42	U.S. Total	533,367	498,445	490,092	7.0			631,555	629,207	600,836	0.4	0.5	5.1	3,973		,648,883
423	.Durable	260,380	238,556	239,131	9.1	-4.7	8.9	392,106	390,266	369,191	0.5	1.7	6.2	1,906		,745,930
4231	Automotive	43,384	40,429	41,315	7.3			62,856		62,670	0.0				,565	303,630
4232	Furniture	7,915	6,971	7,653	13.5			13,348		13,023	1.0		2.5		,527	53,822
4233	Lumber	14,039			8.0			18,106		16,033	-0.9				5,733	91,696
4234	Prof. equip.	43,457	41,412	42,028	4.9			46,644	46,184	45,576	1.0		2.3		,530 ,399	312,873 159,696
42343 4235	Comp. equip.	22,735 17,625	22,174 15,734	21,699 14,369	2.5 12.0			1 <i>7</i> ,766 33,954	17,187 33,812	16,969 28,237	3.4 0.4	4.7 4.2	4.7 20.2		,,399 ',281	106,004
4236	Electrical	55,607	48,780	50,616	14.0			56,760	56,249	54,843	0.4		3.5		,726	364,114
4237	Hardware	13,191	12,945	12,721	1.9			25,150	24,964	23,348	0.7		7.7		,032	91,760
4238	Machinery	43,435	39,390	36,616	10.3			103,321	103,291	95,076	0.0		8.7		,707	272,133
4239	Misc. Durable	21,727	19,892	20,830	9.2			31,967	31,449	30,385	1.6	0.9	5.2		,459	149,898
424	.Nondurable	272,987	259,889	250,961	5.0	-2.4	8.8	239,449	238,941	231,645	0.2	-1.3	3.4	2,066	,981 1	,902,953
4241	Paper	9,041	8,289	8,962	9.1			10,112	10,310	9,193	-1.9		10.0		,365	65,215
4242	Drugs	62,436	58,477	59,879	6.8			63,143	61,770	60,711	2.2		4.0		3,862	445,010
4243	Apparel	14,323	12,022	14,986	19.1			27,831	27,683	28,641	0.5		-2.8		,660	96,721
4244	Groceries	56,106	53,200	56,763	5.5			37,312	37,201	38,348	0.3			426	,302	432,296
4245	Farm products	17,859	18,279	15,792	-2.3	-5.6	13.1	18,000	19,140	14,612	-6.0	-7.2	23.2	148	,082	133,870
4246	Chemicals	11,837	11,357	10,728	4.2	-0.7	10.3	13,029	12,751	11,974	2.2	1.4	8.8		,779	80,830
4247	Petroleum	66,214	64,767	49,285	2.2			22,827	23,185	21,167	-1.5				,518	373,085
4248	Alcohol	14,239	12,624	13,412	12.8			16,758	-	16,739	-1.3		0.1		,114	96,624
4249	Misc. Nondur.	20,932	20,874	21,154	0.3	-7.5	-1.0	30,437	29,926	30,260	1.7	-1.9	0.6	181	,299	179,302
Footnotes	:															

<sup>&</sup>lt;sup>p</sup> Preliminary estimate.

r Revised estimate

<sup>&</sup>lt;sup>1</sup> For a full description of the NAICS codes used in this table, see the 2012 NAICS manual or <www.census.gov/eos/www/naics>.

<sup>&</sup>lt;sup>2</sup> Except where indicated, sales and inventories estimates are adjusted for seasonal variation. Estimates of sales are also adjusted for trading-day differences and moving holidays. See Table 3 for the combined adjustment factors. Adjusted sales-to-date estimates are not tabulated.

<sup>&</sup>lt;sup>3</sup> No significant seasonal pattern for this NAICS code was detected in the latest annual review of the seasonal adjustment for inventories. Consequently, the "Adjusted" inventories estimates are equal to the "Not Adjusted" estimates.

<sup>&</sup>lt;sup>4</sup> Adjusted and not adjusted inventories for aggregate NAICS levels 42, 423, and 424 are revised from the Advance Economic Indicators Report. Data adjusted for seasonality but not price changes. Explanations of confidence intervals and sampling variability can be found on our website at <www.census.gov/wholesale/www/how\_surveys\_are\_collected/monthly\_methodology.html>.

Source: U.S. Census Bureau, Monthly Wholesale Trade Survey, October 10, 2018.

Table 2. Estimated Measures of Sampling Variability of Monthly Wholesale Sales and Inventory Estimates

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

	Kind of Business	Coefficie	nt of variatio	on for mon	thly total	Stand	dard error f	or monthly	Coefficient of variation for total		Standard error for percent change	
NAICS code		Preliminary	/ estimates	Final estimates			of two ve months	current n	month to nonth last ear	Sales to date		Current year sales to date to
		Sales	Inv.	Sales	Inv.	Sales	Inv.	Sales	Inv.	Current year	Previous year	previous year sales to date
42	U.S. Total	1.2	1.4	1.2	1.4	0.2	0.1	2.0	2.1	1.1	1.1	1.9
423	.Durable	1.7	2.2	1.6	2.2	0.4	0.2	2.8	3.0	1.6	1.5	2.8
4231	Automotive	2.7	2.7	2.5	2.7	0.5	0.4	4.6	4.7	2.3	4.0	4.4
4232	Furniture	3.5	8.2	4.8	8.2	3.2	0.5	13.7	19.9	3.9	6.0	13.5
4233	Lumber	3.8	5.8	4.1	5.6	0.7	0.3	8.7	5.5	3.6	5.0	8.1
4234	Prof. equip.	3.2	5.8	3.0	5.7	0.5	0.2	4.2	6.4	3.2	3.8	3.7
42343	Comp. equip.	3.2	6.1	3.2	6.1	1.0	0.3	4.7	8.8	4.2	4.6	5.4
4235	Metals	5.3	4.6	4.8	4.6	0.9	0.5	9.6	8.9	4.7	4.9	8.7
4236	Electrical	3.5	4.2	3.1	4.3	0.8	0.4	4.7	5.2	3.1	2.5	4.4
4237	Hardware	6.2	9.7	6.1	9.6	0.7	0.3	8.9	14.4	5.7	3.3	7.9
4238	Machinery	3.5	4.4	3.4	4.4	1.4	0.3	7.1	6.2	3.0	2.9	5.7
4239	Misc. Durable	4.7	8.7	4.6	8.9	1.3	0.6	9.7	15.2	4.6	5.3	8.2
424	.Nondurable	1.1	1.3	1.2	1.4	0.3	0.2	2.4	1.9	1.1	1.7	2.2
4241	Paper	6.1	10.2	6.2	10.2	0.7	0.4	9.2	13.5	5.9	4.7	8.8
4242	Drugs	2.8	3.5	2.8	3.5	0.5	0.2	3.6	4.8	2.6	2.4	3.4
4243	Apparel	4.3	4.2	3.9	4.1	1.2	0.6	9.1	9.4	4.2	7.2	9.3
4244	Groceries	3.1	3.8	3.1	3.7	0.6	0.3	5.6	10.5	2.9	4.2	5.3
4245	Farm products	3.0	4.9	3.4	5.1	1.0	1.0	6.2	9.9	3.2	3.6	5.0
4246	Chemicals	4.6	9.4	5.4	8.6	1.1	1.2	5.8	12.5	5.0	3.4	5.8
4247	Petroleum	3.0	2.3	3.1	2.3	0.8	0.3	7.0	5.9	2.8	5.3	6.4
4248	Alcohol	6.2	8.7	6.2	8.4	1.5	0.5	8.8	12.6	6.2	5.3	8.9
4249	Misc. Nondur.	5.0	4.7	5.2	4.9	1.4	0.8	6.9	9.3	4.4	3.1	6.1

Note

Estimated measures of sampling variability are based on estimates not adjusted for seasonal variation, trading-day differences, or moving holidays. Additional information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions may be found at <www.census.gov/wholesale/www/how\_surveys\_are\_collected/monthly\_methodology.html>.

Data adjusted for seasonality but not price changes. Explanations of confidence intervals and sampling variability can be found on our website at <www.census.gov/wholesale/www/how\_surveys\_are\_collected/monthly\_methodology.html>.

Source: U.S. Census Bureau, Monthly Wholesale Trade Survey, October 10, 2018.

Table 3. Combined Adjustment Factors for Monthly Wholesale Sales and Inventory Estimates

[Combined adjustment factors are computed using the Census Bureau's X-13 ARIMA-SEATS program and are based on data from the Monthly Wholesale Trade Survey.]

NAICS	Kind of	Sales							Inventories						
code	Business	2018					2017	2018					2017		
		Sep.	Aug.r	Jul.r	Jun.	May	Aug.r	Sep.	Aug.r	Jul.r	Jun.	May	Aug.r		
42	U.S. Total <sup>2</sup>	0.970	1.045	0.982	1.023	1.052	1.048	0.996	0.985	0.990	0.990	0.992	0.985		
423	.Durable	0.986	1.054	0.975	1.028	1.029	1.057	1.007	1.007	1.009	0.999	1.001	1.006		
4231	Automotive	0.944	1.047	0.978	1.003	1.034	1.050	0.981	0.963	0.996	0.992	0.988	0.964		
4232	Furniture	0.978	1.107	0.984	0.986	1.015	1.115	1.037	1.029	1.019	0.992	0.979	1.029		
4233	Lumber	0.978	1.135	1.059	1.080	1.114	1.138	0.993	1.017	1.031	1.029	1.036	1.017		
4234	Prof. equip.	1.020	1.011	0.995	1.071	0.986	1.011	1.016	1.019	1.012	0.995	0.989	1.017		
42343	Comp. equip.	1.056	0.996	1.032	1.127	0.967	0.997	1.038	1.034	1.016	1.008	0.995	1.030		
4235	Metals	0.961	1.073	0.984	1.031	1.078	1.080	1.009	1.015	1.019	0.999	1.002	1.014		
4236	Electrical	1.046	1.033	0.928	1.005	0.985	1.036	1.021	1.023	1.010	0.993	1.004	1.024		
4237	Hardware	0.963	1.103	1.052	1.088	1.084	1.113	1.005	1.007	1.010	1.012	1.018	1.006		
4238	Machinery	0.943	1.071	0.982	1.028	1.067	1.065	1.001	1.006	1.011	1.005	1.011	1.005		
4239	Misc. Durable	0.969	1.073	0.965	0.999	1.032	1.079	1.036	1.020	1.009	0.990	0.981	1.020		
424	.Nondurable	0.958	1.035	0.988	1.018	1.078	1.041	0.980	0.952	0.959	0.974	0.978	0.952		
4241	Paper	0.960	1.093	0.999	1.010	1.053	1.095	0.988	0.982	1.004	1.002	1.004	0.981		
4242	Drugs	0.936	1.053	0.988	0.994	1.044	1.050	1.019	0.980	0.979	1.015	0.974	0.979		
4243	Apparel	1.088	1.159	0.994	0.932	0.955	1.171	1.066	1.070	1.065	1.014	0.967	1.071		
4244	Groceries	0.977	1.048	1.000	1.001	1.069	1.051	1.018	1.000	0.990	0.979	0.977	1.000		
4245	Farm products	0.842	0.908	0.914	0.943	1.040	0.913	0.755	0.647	0.722	0.795	0.898	0.642		
4246	Chemicals <sup>3</sup>	0.943	1.061	1.007	1.026	1.040	1.064	1.000	1.000	1.000	1.000	1.000	1.000		
4247	Petroleum	0.970	1.025	1.013	1.041	1.101	1.036	0.973	0.955	0.975	1.034	1.051	0.961		
4248	Alcohol	0.925	1.091	0.964	1.122	1.103	1.082	0.999	0.996	1.014	1.003	1.028	0.995		
4249	Misc. Nondur.	0.872	0.941	0.954	1.081	1.287	0.958	0.935	0.914	0.899	0.922	0.968	0.909		

Footnotes:

#### Note:

The seasonal adjustment factors shown are estimates derived from a model that uses sample survey data as input. Therefore, these estimates may contain sampling error and nonsampling error. Additional information on the general form of the model and the X-13 ARIMA-SEATS program may be found at <www.census.gov/srd/www/x13as/>.

Data adjusted for seasonality but not price changes. Explanations of confidence intervals and sampling variability can be found on our website at <www.census.gov/wholesale/www/how\_surveys\_are\_collected/monthly\_methodology.html>.

Source: U.S. Census Bureau, Monthly Wholesale Trade Survey, October 10, 2018.

r Revised factors.

<sup>&</sup>lt;sup>1</sup> Combined factors for sales include the effects of seasonal variation, trading day differences, and moving holidays. Combined factors for inventories include only the effects of seasonal variation.

<sup>&</sup>lt;sup>2</sup> Adjusted sales and inventories estimates for detailed kind-of-business levels in Table 1 are computed by dividing each "Not Adjusted" estimate by the combined 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. Combined 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.

<sup>&</sup>lt;sup>3</sup> No significant seasonal pattern for this NAICS code was detected in the latest annual review of the seasonal adjustment for inventories. Therefore, the combined adjustment factors for inventories are set to one for this NAICS code.