



# Monthly Survey of Manufacturing

July 2003



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Statistics Canada  
Manufacturing, Construction & Energy Division  
Monthly Survey of Manufacturing Section

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July 2003

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- . not available for any reference period.
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In the following tables, some components may not add exactly to the total, because of rounding.

For a complete description of concepts, methodology and definitions, please refer to the "Survey Documentation" section at the end of this publication or consult Statistics Canada's Website at [www.statcan.ca/english/sdds/2101.htm](http://www.statcan.ca/english/sdds/2101.htm) .

## A note on CANSIM

The data published in Monthly Survey of Manufacturing (Tables 304-0014 and 304-0015) (Catalogue No. 31-001-XIE) are also available in machine-readable form through CANSIM (Canadian Socio-Economic Information Management System). Users interested in accessing data via CANSIM should contact one of Statistics Canada's regional centres at the numbers listed on the inside front cover of this Publication, or contact the Marketing Division, Statistics Canada R.H. Coats Building, Ottawa, Ontario, K1A 0T6 (613) 951-8200.

## Acknowledgement

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## Highlights

Manufacturers put in a solid effort in July, following a dismal second quarter. Widespread increases contributed to a 1.7% rise in shipments to \$43.0 billion. Meanwhile, finished-product inventories fell back 1.0%, and new orders continued to gain ground, rising for the second consecutive month. Only the persistent downturn in unfilled orders tarnished the lustre of an otherwise positive month.

Led by motor vehicle manufacturing, 16 of 21 industries, representing three-quarters of total shipments, reported increases in July. The breadth of July's increase was encouraging, since the Canadian economy has faced several setbacks in recent months.

### Several shocks jolted the Canadian economy in recent months

Manufacturers especially reliant on the export market have had to contend with a dramatic appreciation in the Canadian dollar. The meat products industry continued to reel from the effects of the international ban on exports of Canadian beef products. The ban was put in place following the discovery of a single case of bovine spongiform encephalopathy (BSE) in Alberta on May 20.

Not yet reflected in this month's data, manufacturers in Ontario were affected by the electricity blackout of August 14. Time will tell the scope of the blackout's impact on manufacturing shipments for August.

On the employment front, manufacturing jobs maintained their levels in August, according to the latest Labour Force Survey. However, this followed significant job losses earlier in the year. So far in 2003, factory jobs have been in decline, as employment in the sector has fallen 2.7% (-62,000).

Meanwhile, Canada's largest trading partner, the United States, continued to show signs of recovery. Following an extended period of weak output, the US economy has been more upbeat in recent months. US manufacturers boosted shipments by 2.5% in July, following a 1.5% increase in June. Manufacturers also continued to reduce inventory levels, which now stand at the lowest level since September 1997.

### Ontario rebounds in July

Ontario led the six provinces reporting higher shipments in July. Motor vehicle manufacturing, coupled with increases in the machinery and petroleum industries boosted shipments in Ontario by \$706 million (+3.1%) to \$23.1 billion. Manitoba (+\$30.2 million) and British Columbia (+\$26.9 million) recovered somewhat in July, following extended periods of reduced manufacturing activity.

## Shipments by province and territory

	June 2003	July 2003	June to July 2003
Seasonally adjusted			
	\$ millions		% change
Newfoundland and Labrador	210	208	-1.1
Prince Edward Island	111	113	1.6
Nova Scotia	715	723	1.1
New Brunswick	1,074	1,026	-4.5
Quebec	9,941	9,930	-0.1
Ontario	22,443	23,149	3.1
Manitoba	933	963	3.2
Saskatchewan	621	609	-2.0
Alberta	3,490	3,506	0.5
British Columbia	2,691	2,718	1.0
Yukon, Northwest Territories and Nunavut	5	5	-11.5

### Durable goods manufacturers boost shipments

Canadian manufacturers of the big-ticket durable goods industries were primarily responsible for the strong start to the summer. Shipments of durable goods rose 2.4% to \$24.5 billion, making up ground lost earlier in the year. Manufacturers of nondurable goods increased shipments 0.7%, the first rise in four months.

Shipments of motor vehicles jumped 7.6% to \$5.7 billion, leading all industries in July. Attractive incentive packages and low interest rates, as well as an improving economy in the United States, continued to fuel consumer demand for new automobiles in North America. Also, some manufacturers stepped up production in preparation for the new model year.

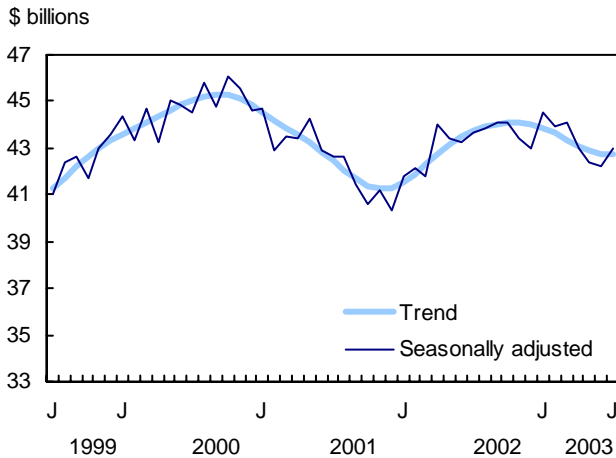
Machinery manufacturers reported shipments of \$2.0 billion, up 8.6% from June, as several contracts were completed and shipped from various plants. Meanwhile, higher industrial prices for primary metal products (+2.3%) contributed to a 3.0% increase in shipments of the primary metals industry in July. This was the first increase in six months, as the industry has been recently battered by high energy costs, weak industrial prices and the stronger Canadian dollar.

### Manufacturing of computers and food offset July's higher shipments

Decreases in the computer and electronic products and food industries partly offset July's increase in total shipments. Shipments of computers fell 10.4% to \$1.4 billion, the fifth decline in the last six months, and down from June's quarter-end high.

Food shipments decreased 1.0% to \$5.2 billion in July, the third drop in a row and the lowest level since March 2002. Some of July's decline was concentrated in seafood product preparation and packaging, as the industry began to wind down for the season.

### Motor vehicle manufacturing boost July shipments



### An update on the impact of mad cow disease

Key international export markets for Canadian beef products remained closed for a second straight month, as the mad cow scare continued. Animal (excluding poultry) slaughtering shipments in Canada edged up 3.3% to \$664.9 million, following a hefty 14.8% drop in June. In July, some processors received cattle for domestic consumption, which contributed to the modest rise. Year-to-date shipments remained 12.3% below the same period of 2002.

Alberta has been hit the hardest by the closure of the international export market for beef products. During the first seven months of 2003, shipments of slaughtered animals (excluding poultry) remained 11.1% below last year's level for the same period.

At the time of this report, negotiations to lift the ban on exports of beef products continued between Canada and the United States. The first shipments of some low-risk cuts of boneless beef crossed the border in early September, as the United States agreed to a partial lifting of the ban.

### Lower finished-products pull down total inventories

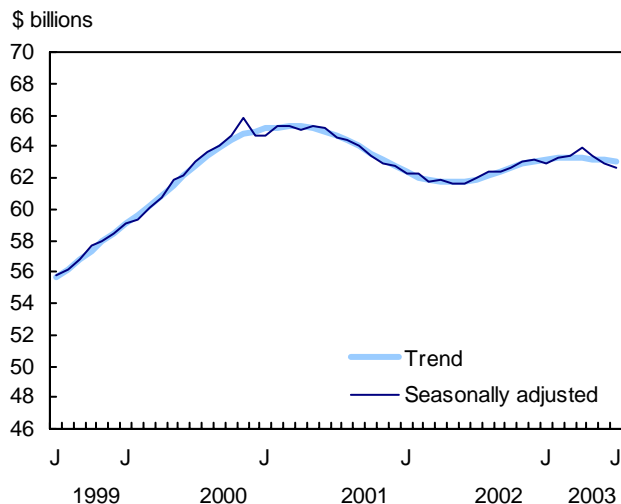
Manufacturers pared 0.3% from inventories to \$62.7 billion in July, following declines in May (-0.7%) and June (-0.9%). This marked the longest string of inventory decreases since early 2002.

Manufacturing inventories have been on a rollercoaster ride since their peak of \$65.8 billion in November 2000, the height of the high-tech boom. July's inventory level is the lowest since October 2002 (\$62.6 billion), and well off the recent high of April 2003 (\$63.9 billion).

In July, finished products and raw materials both contributed to the decline in total inventories. Manufacturers reduced finished-product inventories by 1.0% to \$19.7 billion, following a 0.7% reduction in June. The trend in finished-product inventories, although positive since August 2002, continued to slow in recent months. Sustained improvement of the US economy should assist in curbing further build-up of finished-product inventories.

Inventories of raw materials decreased 0.5% to \$27.1 billion. July represented the fourth consecutive decline in raw materials. Meanwhile, goods-in-process inventories rose 1.0%, partly offsetting the overall decline in inventories.

### Manufacturers' inventories continue to decline



Manufacturers of chemical products (-3.0%), machinery (-3.8%) and motor vehicles (-5.2%) were the primary contributors to the lower inventories in July.

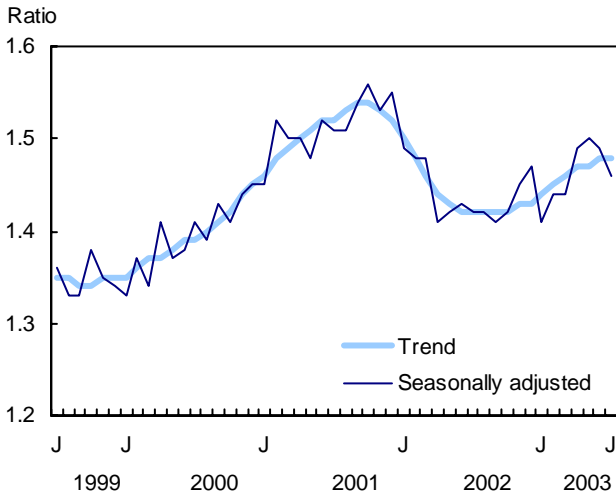
### Improvement in the inventory-to-shipment ratio

A sizable boost in shipments coupled with a continuing decline in inventory levels contributed to an improved inventory-to-shipment ratio. The ratio fell back to 1.46 in July from June's 1.49, the lowest level in four months.

The finished-product inventory-to-shipment ratio edged back to 0.46 in July, following three months at 0.47. This is the first drop in the ratio since the start of the year. The finished-product inventory-to-shipment ratio has been on an upward trend since mid-2002.

The ratio is a measure of the time that would be required in order to exhaust finished-product inventories if shipments were to remain at their current level.

**The inventory-to-shipment ratio improves**



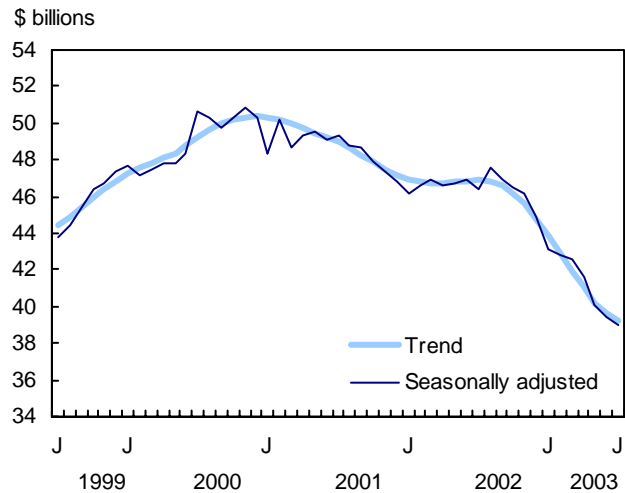
**Aerospace manufacturing pulls down total unfilled orders**

In July, the one offsetting indicator of an otherwise positive month was the unrelenting slide of unfilled orders. Manufacturers' unfilled orders dropped 1.2% to \$39.0 billion. This was the eleventh consecutive decline, representing the longest run of consecutive decreases since the 14 reported during the 1990-1991 recession. The trend for unfilled orders has remained negative since August 2002.

The global downturn in the aviation sector contributed to the July's drop in unfilled orders. Orders for aerospace products and parts fell 3.9% to \$11.8 billion, the lowest level since August 1997. Excluding the aerospace industry, total manufacturing unfilled orders remained unchanged (0.0%) in July.

Also reporting fewer unfilled orders on the books was the plastics and rubber products industry. Orders decreased 6.5%, the third decline in a row. Meanwhile, machinery manufacturers partly offset the decline in July, reporting a 1.8% boost in orders to \$6.1 billion.

**Unfilled orders continue to slide**



**New orders rise in July**

Following a 2.0% increase in June, new orders continued to expand in July, rising 2.1% to \$42.5 billion. Increases in the machinery and motor vehicles industries contributed to the highest level in total new orders since March.



**Note to readers**

In addition to current-month estimates, data for the previous three months are regularly revised. Factors influencing revisions include late receipt of company data, incorrect information reported earlier, replacement of estimates with actual figures (once available), and seasonal adjustments. Consult the appropriate CANSIM tables for revised data.

**Non-durable goods industries** include food, beverage and tobacco products, textile mills, textile product mills, leather and allied products, paper, printing and related support activities, petroleum and coal products, chemicals and plastic and rubber products.

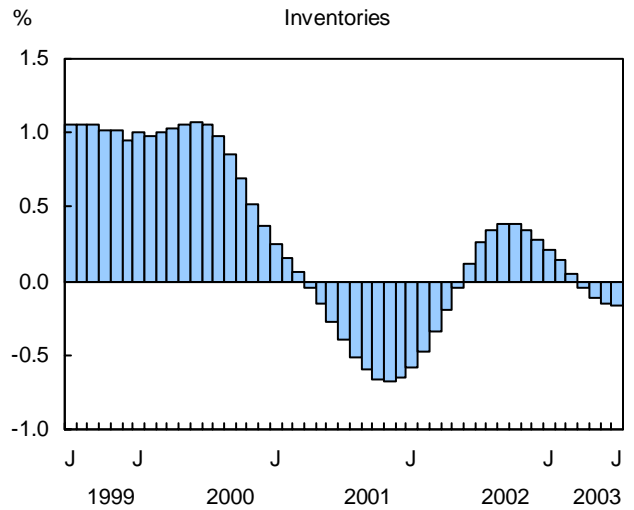
**Durable goods industries** include clothing, wood products, non-metallic mineral products, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment, appliance and components, transportation equipment, furniture and related products and miscellaneous manufacturing.

**Unfilled orders** are a stock of orders that will contribute to future shipments assuming that the orders are not cancelled.

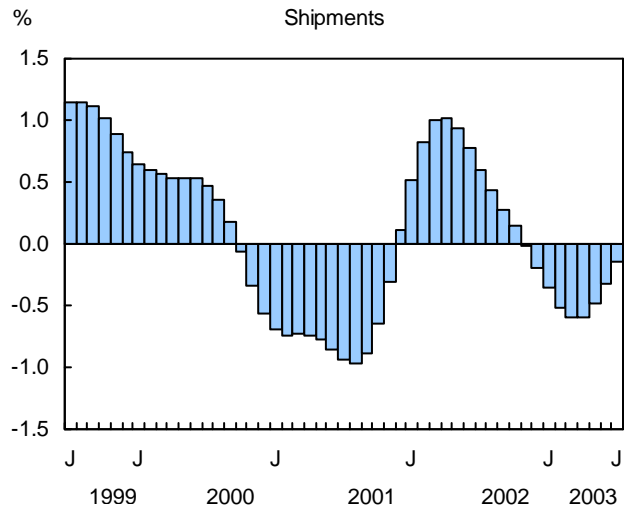
**New orders** are those received whether shipped in the current month or not. They are measured as the sum of shipments for the current month plus the change in unfilled orders. Some people interpret new orders as orders that will lead to future demand. This is inappropriate since the "new orders" variable includes orders that have already been shipped. Readers should take note that the month-to-month change in new orders may be volatile. This will happen particularly if the previous month's change in unfilled orders is closely related to the current month's change.

Not all orders will be translated into Canadian factory shipments because portions of large contracts can be subcontracted out to manufacturers in other countries.

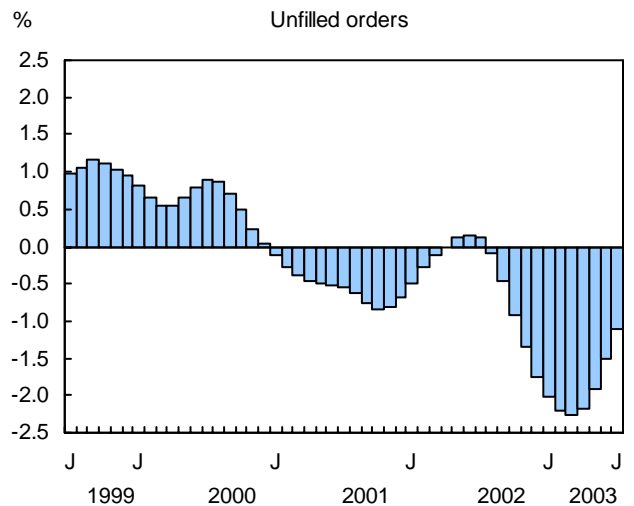
**Monthly change in trend**



**Monthly change in trend**



**Monthly change in trend**



## Products and Services

### Related Products and Data Sources

- Manufacturing Industries of Canada, 31-203-XPB
- Business Condition Survey, CANSIM (\$) tables 302-0007 and 302-0008
- Perspectives on Labour and Income, 75-001-XIE or 75-001-XPE
- Industrial Product Price Indexes, 62-011-XIE or 62-011-XPB
- Industrial Capacity Utilization Rates CANSIM II table 028-0002

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February 2003  
March 2003  
April 2003  
May 2003  
June 2003  
July 2003  
August 2003  
September 2003  
October 2003  
November 2003  
December 2003

#### Monthly Survey of Manufacturing

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September 16, 2003  
October 15, 2003  
November 14, 2003  
December 16, 2003  
January 21, 2004  
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**Table 1**  
**All manufacturing industries**

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
July 2002	39,887	61,205	46,885	40,016	43,649	61,958	46,440	43,156		
August 2002	45,110	62,231	48,159	46,122	43,851	62,407	47,556	44,968		
September 2002	45,149	62,193	47,324	44,308	44,134	62,320	46,963	43,541		
October 2002	47,191	62,295	46,773	46,640	44,132	62,580	46,491	43,660		
November 2002	44,305	63,129	46,202	43,734	43,385	62,989	46,127	43,021		
December 2002	39,721	62,389	44,536	38,054	42,998	63,161	44,820	41,690		
January 2003	41,879	62,601	42,643	39,986	44,520	62,929	43,123	42,823		
February 2003	40,817	63,980	42,588	40,762	43,901	63,307	42,807	43,584		
March 2003	45,280	64,512	42,467	45,159	44,070	63,368	42,616	43,879		
April 2003	43,482	64,595	41,315	42,330	42,953	63,898	41,630	41,967		
May 2003	44,702	63,705	40,071	43,459	42,395	63,457	40,050	40,815		
June 2003	43,806	62,417	39,209	42,944	42,235	62,855	39,439	41,625		
July 2003	39,388	61,737	39,122	39,301	42,950	62,690	38,976	42,486		
Month to month % change										
Shipments		Inventories		Inventory to shipments ratio		Unfilled orders		New orders		
Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	
July 2002	1.0	0.6	0.6	0.3	1.42	1.42	-1.1	0.1	-0.6	0.5
August 2002	0.5	0.4	0.7	0.4	1.42	1.42	2.4	-0.1	4.2	0.2
September 2002	0.6	0.3	-0.1	0.4	1.41	1.42	-1.2	-0.5	-3.2	-0.1
October 2002	0.0	0.1	0.4	0.4	1.42	1.42	-1.0	-0.9	0.3	-0.3
November 2002	-1.7	0.0	0.7	0.3	1.45	1.43	-0.8	-1.4	-1.5	-0.5
December 2002	-0.9	-0.2	0.3	0.3	1.47	1.43	-2.8	-1.7	-3.1	-0.6
January 2003	3.5	-0.4	-0.4	0.2	1.41	1.44	-3.8	-2.0	2.7	-0.6
February 2003	-1.4	-0.5	0.6	0.1	1.44	1.45	-0.7	-2.2	1.8	-0.7
March 2003	0.4	-0.6	0.1	0.1	1.44	1.46	-0.4	-2.3	0.7	-0.6
April 2003	-2.5	-0.6	0.8	0.0	1.49	1.47	-2.3	-2.2	-4.4	-0.5
May 2003	-1.3	-0.5	-0.7	-0.1	1.50	1.47	-3.8	-1.9	-2.7	-0.2
June 2003	-0.4	-0.3	-0.9	-0.1	1.49	1.48	-1.5	-1.5	2.0	0.1
July 2003	1.7	-0.1	-0.3	-0.2	1.46	1.48	-1.2	-1.1	2.1	0.3

**Table 2**
**Motor vehicle, and parts and accessories industries**

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
July 2002	5,546	3,527	1,776	5,625	8,803	3,576	1,733	8,837		
August 2002	8,832	3,490	1,939	8,995	8,590	3,493	1,894	8,750		
September 2002	8,417	3,525	2,060	8,537	8,347	3,512	2,031	8,485		
October 2002	9,054	3,445	1,968	8,962	8,298	3,450	1,959	8,226		
November 2002	8,695	3,660	1,933	8,660	8,124	3,586	1,932	8,097		
December 2002	6,157	3,689	1,855	6,079	7,258	3,751	1,853	7,179		
January 2003	8,166	3,585	1,834	8,145	8,236	3,552	1,816	8,199		
February 2003	8,211	3,630	1,787	8,164	8,076	3,580	1,779	8,039		
March 2003	8,926	3,529	1,724	8,863	8,335	3,495	1,730	8,286		
April 2003	8,538	3,500	1,630	8,443	8,039	3,489	1,680	7,989		
May 2003	8,733	3,419	1,581	8,684	8,010	3,399	1,610	7,941		
June 2003	8,404	3,236	1,583	8,406	7,876	3,306	1,612	7,878		
July 2003	5,317	3,152	1,578	5,312	8,258	3,237	1,571	8,217		
Month to month % change										
Shipments		Inventories		Inventory to shipments ratio		Unfilled orders		New orders		
Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	
July 2002	5.3	0.3	4.0	0.6	0.41	0.41	2.0	3.1	5.9	0.3
August 2002	-2.4	-0.1	-2.3	0.6	0.41	0.41	9.2	2.7	-1.0	-0.2
September 2002	-2.8	-0.4	0.6	0.5	0.42	0.42	7.3	1.9	-3.0	-0.6
October 2002	-0.6	-0.6	-1.8	0.5	0.42	0.42	-3.5	0.7	-3.1	-0.9
November 2002	-2.1	-0.7	3.9	0.3	0.44	0.43	-1.4	-0.5	-1.6	-1.0
December 2002	-10.7	-0.8	4.6	0.1	0.52	0.43	-4.1	-1.6	-11.3	-1.0
January 2003	13.5	-0.7	-5.3	-0.3	0.43	0.43	-2.0	-2.4	14.2	-0.9
February 2003	-1.9	-0.6	0.8	-0.7	0.44	0.43	-2.1	-2.7	-2.0	-0.6
March 2003	3.2	-0.4	-2.4	-1.0	0.42	0.43	-2.8	-2.8	3.1	-0.4
April 2003	-3.5	-0.2	-0.2	-1.3	0.43	0.42	-2.9	-2.5	-3.6	-0.2
May 2003	-0.4	0.0	-2.6	-1.4	0.42	0.42	-4.2	-1.9	-0.6	0.2
June 2003	-1.7	0.3	-2.7	-1.3	0.42	0.41	0.1	-1.2	-0.8	0.4
July 2003	4.8	0.5	-2.1	-1.1	0.39	0.41	-2.5	-0.5	4.3	0.6

Table 3

## All manufacturing industries except motor vehicle, parts and accessories industries

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
July 2002	34,340	57,678	45,109	34,391	34,846	58,383	44,707	34,319		
August 2002	36,279	58,740	46,220	37,127	35,261	58,914	45,663	36,218		
September 2002	36,732	58,668	45,264	35,771	35,787	58,808	44,932	35,056		
October 2002	38,137	58,850	44,804	37,678	35,834	59,130	44,532	35,434		
November 2002	35,610	59,468	44,269	35,075	35,260	59,403	44,195	34,923		
December 2002	33,564	58,700	42,681	31,975	35,740	59,410	42,967	34,511		
January 2003	33,713	59,016	40,809	31,841	36,284	59,376	41,307	34,624		
February 2003	32,607	60,350	40,801	32,598	35,825	59,728	41,027	35,546		
March 2003	36,354	60,983	40,743	36,296	35,735	59,873	40,886	35,593		
April 2003	34,945	61,095	39,685	33,887	34,914	60,409	39,950	33,979		
May 2003	35,970	60,286	38,490	34,775	34,385	60,058	38,440	32,874		
June 2003	35,402	59,181	37,626	34,538	34,359	59,549	37,827	33,747		
July 2003	34,072	58,585	37,544	33,989	34,692	59,453	37,405	34,269		
Month to month % change										
Shipments		Inventories		Inventory to shipments ratio		Unfilled orders		New orders		
Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	
July 2002	-0.1	0.7	0.4	0.2	1.68	1.66	-1.2	0.0	-2.1	0.6
August 2002	1.2	0.6	0.9	0.3	1.67	1.65	2.1	-0.2	5.5	0.3
September 2002	1.5	0.4	-0.2	0.4	1.64	1.65	-1.6	-0.6	-3.2	0.0
October 2002	0.1	0.3	0.5	0.4	1.65	1.65	-0.9	-1.0	1.1	-0.2
November 2002	-1.6	0.1	0.5	0.3	1.68	1.66	-0.8	-1.4	-1.4	-0.4
December 2002	1.4	-0.1	0.0	0.3	1.66	1.66	-2.8	-1.7	-1.2	-0.5
January 2003	1.5	-0.3	-0.1	0.2	1.64	1.67	-3.9	-2.0	0.3	-0.6
February 2003	-1.3	-0.5	0.6	0.2	1.67	1.68	-0.7	-2.2	2.7	-0.7
March 2003	-0.3	-0.6	0.2	0.1	1.68	1.70	-0.3	-2.2	0.1	-0.7
April 2003	-2.3	-0.7	0.9	0.0	1.73	1.71	-2.3	-2.2	-4.5	-0.5
May 2003	-1.5	-0.6	-0.6	0.0	1.75	1.72	-3.8	-1.9	-3.3	-0.3
June 2003	-0.1	-0.5	-0.8	-0.1	1.73	1.72	-1.6	-1.5	2.7	0.0
July 2003	1.0	-0.3	-0.2	-0.1	1.71	1.73	-1.1	-1.1	1.5	0.2

**Table 4**  
**Shipments by major group and selected industries**

	NAICS Code	Unadjusted					
		Current periods					
		July 2003	June 2003	May 2003	April 2003		
		\$ millions					
Food manufacturing	311	5,337	5,442	5,543	5,214		
Beverage and tobacco product manufacturing	312	1,310	1,275	1,209	1,071		
Textile mills	313	201	259	266	259		
Textile product mills	314	188	202	213	195		
Clothing manufacturing	315	500	435	479	511		
Leather and allied product manufacturing	316	46	42	48	44		
Wood product manufacturing	321	2,341	2,394	2,406	2,343		
Paper manufacturing	322	2,613	2,565	2,678	2,722		
Printing and related support activities	323	777	803	859	862		
Petroleum and coal products manufacturing	324	2,939	2,742	2,778	2,766		
Chemical manufacturing	325	3,188	3,465	3,771	3,429		
Plastics and rubber products manufacturing	326	1,881	2,018	2,082	2,057		
Non-metallic mineral product manufacturing	327	1,172	1,159	1,122	948		
Primary metal manufacturing	331	2,505	2,628	2,750	2,821		
Fabricated metal product manufacturing	332	2,281	2,432	2,371	2,290		
Machinery manufacturing	333	1,860	1,874	1,985	1,892		
Computer and electronic product manufacturing	334	1,303	1,672	1,434	1,344		
Electrical equipment, appliance and component manufacturing	335	703	800	773	735		
Transportation equipment manufacturing	336	6,781	10,083	10,430	10,489		
Motor vehicle manufacturing	3361	3,455	5,702	6,010	5,868		
Motor vehicle body and trailer manufacturing	3362	214	233	263	255		
Motor vehicle parts manufacturing	3363	1,862	2,702	2,723	2,670		
Aerospace product and parts manufacturing	3364	851	956	958	1,221		
Railroad rolling stock manufacturing	3365	168	273	258	234		
Ship and boat building	3366	75	84	115	99		
Furniture and related product manufacturing	337	1,015	1,058	1,051	1,041		
Miscellaneous manufacturing	339	449	458	455	450		
<b>Non-durable goods industries</b>		<b>18,480</b>	<b>18,814</b>	<b>19,447</b>	<b>18,619</b>		
<b>Durable goods industries</b>		<b>20,908</b>	<b>24,993</b>	<b>25,255</b>	<b>24,864</b>		
<b>Manufacturing</b>		<b>39,388</b>	<b>43,806</b>	<b>44,702</b>	<b>43,482</b>		
		Previous year		Year-to-date		Annual	
		July 2002	June 2002	% Change from 2002	2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	5,391	5,425	1.7	36,311	1.1	62,911
Beverage and tobacco product manufacturing	312	1,277	1,277	1.9	7,690	3.7	13,304
Textile mills	313	219	285	-9.6	1,717	-3.7	3,210
Textile product mills	314	203	217	-7.9	1,351	0.5	2,520
Clothing manufacturing	315	539	489	-7.4	3,482	-3.0	6,785
Leather and allied product manufacturing	316	52	53	-14.5	320	-9.9	777
Wood product manufacturing	321	2,399	2,510	-7.8	16,158	7.2	29,498
Paper manufacturing	322	2,759	2,701	-0.4	18,561	-4.4	32,726
Printing and related support activities	323	784	803	0.3	5,768	-4.1	10,061
Petroleum and coal products manufacturing	324	2,822	2,569	24.6	21,195	1.1	32,350
Chemical manufacturing	325	3,058	3,188	9.9	23,817	4.0	37,769
Plastics and rubber products manufacturing	326	1,869	2,064	1.8	13,659	6.7	23,002
Non-metallic mineral product manufacturing	327	1,109	1,081	6.3	6,642	9.7	11,586
Primary metal manufacturing	331	2,562	2,668	3.9	19,343	8.8	32,216
Fabricated metal product manufacturing	332	2,184	2,325	1.3	15,916	2.8	27,510
Machinery manufacturing	333	1,795	2,056	-4.8	13,313	1.3	24,113
Computer and electronic product manufacturing	334	1,677	1,967	-17.4	10,281	-16.5	21,255
Electrical equipment, appliance and component manufacturing	335	727	794	-4.2	5,242	-7.6	9,335
Transportation equipment manufacturing	336	7,012	10,555	-1.9	68,279	4.6	119,746
Motor vehicle manufacturing	3361	3,527	5,831	-1.1	38,009	5.7	65,797
Motor vehicle body and trailer manufacturing	3362	200	237	2.3	1,648	8.5	2,704
Motor vehicle parts manufacturing	3363	2,019	2,876	-3.6	18,284	10.2	32,741
Aerospace product and parts manufacturing	3364	825	1,083	-2.9	6,882	-15.0	12,472
Railroad rolling stock manufacturing	3365	189	254	8.0	1,745	5.4	2,878
Ship and boat building	3366	101	173	-30.7	627	20.6	1,242
Furniture and related product manufacturing	337	987	1,016	2.2	7,207	2.4	12,303
Miscellaneous manufacturing	339	462	465	-0.1	3,104	8.5	5,527
<b>Non-durable goods industries</b>		<b>18,433</b>	<b>18,582</b>	<b>5.6</b>	<b>130,388</b>	<b>1.1</b>	<b>218,631</b>
<b>Durable goods industries</b>		<b>21,454</b>	<b>25,927</b>	<b>-2.6</b>	<b>168,967</b>	<b>2.5</b>	<b>299,874</b>
<b>Manufacturing</b>		<b>39,887</b>	<b>44,509</b>	<b>0.8</b>	<b>299,355</b>	<b>1.9</b>	<b>518,505</b>

Table 4

## Shipments by major group and selected industries - concluded

	NAICS Code	Change from June	Seasonally adjusted						
			Current periods						
			July 2003	June 2003	May 2003	April 2003			
			\$ millions						
Food manufacturing	311	-53	5,189	5,242	5,279	5,352			
Beverage and tobacco product manufacturing	312	25	1,135	1,110	1,132	1,113			
Textile mills	313	0	242	242	247	247			
Textile product mills	314	5	197	193	195	191			
Clothing manufacturing	315	22	522	500	518	523			
Leather and allied product manufacturing	316	3	55	52	55	56			
Wood product manufacturing	321	64	2,292	2,228	2,192	2,222			
Paper manufacturing	322	23	2,636	2,613	2,685	2,732			
Printing and related support activities	323	6	838	833	846	835			
Petroleum and coal products manufacturing	324	61	2,880	2,820	2,834	2,967			
Chemical manufacturing	325	-6	3,335	3,341	3,328	3,296			
Plastics and rubber products manufacturing	326	72	1,962	1,890	1,902	1,941			
Non-metallic mineral product manufacturing	327	14	1,025	1,011	984	995			
Primary metal manufacturing	331	77	2,688	2,611	2,635	2,730			
Fabricated metal product manufacturing	332	1	2,354	2,353	2,277	2,312			
Machinery manufacturing	333	156	1,958	1,802	1,941	1,878			
Computer and electronic product manufacturing	334	-163	1,405	1,568	1,458	1,476			
Electrical equipment, appliance and component manufacturing	335	-18	748	765	754	739			
Transportation equipment manufacturing	336	410	9,982	9,573	9,667	9,860			
Motor vehicle manufacturing	3361	404	5,714	5,309	5,493	5,479			
Motor vehicle body and trailer manufacturing	3362	11	235	223	231	218			
Motor vehicle parts manufacturing	3363	-22	2,544	2,567	2,517	2,560			
Aerospace product and parts manufacturing	3364	20	1,029	1,009	988	1,107			
Railroad rolling stock manufacturing	3365	-33	221	254	251	268			
Ship and boat building	3366	5	83	78	84	84			
Furniture and related product manufacturing	337	11	1,051	1,040	1,030	1,032			
Miscellaneous manufacturing	339	6	455	448	437	454			
<b>Non-durable goods industries</b>		<b>134</b>	<b>18,471</b>	<b>18,336</b>	<b>18,503</b>	<b>18,730</b>			
<b>Durable goods industries</b>		<b>580</b>	<b>24,479</b>	<b>23,899</b>	<b>23,892</b>	<b>24,223</b>			
<b>Manufacturing</b>		<b>715</b>	<b>42,950</b>	<b>42,235</b>	<b>42,395</b>	<b>42,953</b>			
			Change from previous month		Trend change from previous month				
			July 2003	June 2003	May 2003	July 2003	June 2003	May 2003	April 2003
			percentage						
Food manufacturing	311	-1.0	-0.7	-1.4	-0.5	-0.6	-0.5	-0.4	
Beverage and tobacco product manufacturing	312	2.2	-2.0	1.7	0.2	0.2	0.0	-0.1	
Textile mills	313	0.0	-1.6	0.0	-0.3	-0.4	-0.6	-0.7	
Textile product mills	314	2.4	-1.2	1.8	0.3	0.1	-0.2	-0.6	
Clothing manufacturing	315	4.4	-3.5	-1.0	-0.5	-0.9	-1.3	-1.7	
Leather and allied product manufacturing	316	5.1	-5.3	-1.3	-0.1	-0.5	-1.1	-1.7	
Wood product manufacturing	321	2.9	1.6	-1.3	0.2	-0.2	-0.7	-1.2	
Paper manufacturing	322	0.9	-2.7	-1.7	-0.4	-0.5	-0.6	-0.5	
Printing and related support activities	323	0.7	-1.5	1.3	-0.2	-0.3	-0.3	-0.3	
Petroleum and coal products manufacturing	324	2.1	-0.5	-4.5	-1.0	-1.4	-1.6	-1.5	
Chemical manufacturing	325	-0.2	0.4	1.0	-0.3	-0.4	-0.5	-0.4	
Plastics and rubber products manufacturing	326	3.8	-0.6	-2.0	-0.7	-0.7	-0.7	-0.6	
Non-metallic mineral product manufacturing	327	1.4	2.7	-1.1	0.3	0.1	-0.2	-0.3	
Primary metal manufacturing	331	3.0	-0.9	-3.5	-1.2	-1.4	-1.5	-1.4	
Fabricated metal product manufacturing	332	0.0	3.3	-1.5	0.4	0.4	0.3	0.2	
Machinery manufacturing	333	8.6	-7.2	3.3	0.4	0.4	0.2	-0.1	
Computer and electronic product manufacturing	334	-10.4	7.5	-1.2	-1.0	-1.5	-1.9	-2.2	
Electrical equipment, appliance and component manufacturing	335	-2.3	1.6	2.0	0.0	0.0	-0.1	-0.2	
Transportation equipment manufacturing	336	4.3	-1.0	-2.0	0.4	0.3	0.0	-0.3	
Motor vehicle manufacturing	3361	7.6	-3.3	0.3	1.0	0.9	0.6	0.4	
Motor vehicle body and trailer manufacturing	3362	5.1	-3.2	5.6	0.4	0.2	0.0	-0.2	
Motor vehicle parts manufacturing	3363	-0.9	2.0	-1.7	-0.7	-1.0	-1.3	-1.5	
Aerospace product and parts manufacturing	3364	2.0	2.2	-10.8	0.5	0.4	-0.1	-0.7	
Railroad rolling stock manufacturing	3365	-12.9	1.2	-6.7	-1.6	-1.3	-0.7	0.0	
Ship and boat building	3366	6.3	-7.1	-0.9	0.8	1.0	1.3	1.5	
Furniture and related product manufacturing	337	1.1	1.0	-0.3	0.3	0.2	0.0	-0.1	
Miscellaneous manufacturing	339	1.4	2.6	-3.7	0.0	-0.2	-0.5	-0.7	
<b>Non-durable goods industries</b>		<b>0.7</b>	<b>-0.9</b>	<b>-1.2</b>	<b>-0.5</b>	<b>-0.6</b>	<b>-0.7</b>	<b>-0.6</b>	
<b>Durable goods industries</b>		<b>2.4</b>	<b>0.0</b>	<b>-1.4</b>	<b>0.1</b>	<b>-0.1</b>	<b>-0.4</b>	<b>-0.6</b>	
<b>Manufacturing</b>		<b>1.7</b>	<b>-0.4</b>	<b>-1.3</b>	<b>-0.1</b>	<b>-0.3</b>	<b>-0.5</b>	<b>-0.6</b>	

**Table 5**  
**Inventories by major group and selected industries**

	NAICS Code	Unadjusted					
		Current periods					
		July 2003	June 2003	May 2003	April 2003		
		\$ millions					
Food manufacturing	311	4,786	4,798	4,766	4,788		
Beverage and tobacco product manufacturing	312	1,753	1,778	1,815	1,826		
Textile mills	313	456	454	456	460		
Textile product mills	314	309	314	321	327		
Clothing manufacturing	315	1,300	1,312	1,238	1,213		
Leather and allied product manufacturing	316	154	150	137	130		
Wood product manufacturing	321	4,215	4,284	4,578	5,017		
Paper manufacturing	322	3,588	3,620	3,632	3,647		
Printing and related support activities	323	715	701	700	712		
Petroleum and coal products manufacturing	324	1,786	1,679	1,606	1,760		
Chemical manufacturing	325	5,810	6,009	6,074	6,170		
Plastics and rubber products manufacturing	326	2,128	2,163	2,250	2,245		
Non-metallic mineral product manufacturing	327	1,201	1,223	1,240	1,251		
Primary metal manufacturing	331	4,745	4,745	4,861	4,859		
Fabricated metal product manufacturing	332	3,599	3,641	3,687	3,714		
Machinery manufacturing	333	4,371	4,496	4,630	4,540		
Computer and electronic product manufacturing	334	4,077	4,052	4,301	4,314		
Electrical equipment, appliance and component manufacturing	335	1,321	1,348	1,395	1,427		
Transportation equipment manufacturing	336	12,874	13,122	13,481	13,612		
Motor vehicle manufacturing	3361	1,237	1,327	1,471	1,505		
Motor vehicle body and trailer manufacturing	3362	446	469	466	484		
Motor vehicle parts manufacturing	3363	1,915	1,908	1,949	1,995		
Aerospace product and parts manufacturing	3364	7,794	7,999	8,121	8,110		
Railroad rolling stock manufacturing	3365	1,204	1,095	1,142	1,196		
Ship and boat building	3366	112	112	118	125		
Furniture and related product manufacturing	337	1,551	1,530	1,520	1,528		
Miscellaneous manufacturing	339	997	999	1,017	1,054		
<b>Non-durable goods industries</b>		<b>21,486</b>	<b>21,665</b>	<b>21,757</b>	<b>22,066</b>		
<b>Durable goods industries</b>		<b>40,251</b>	<b>40,752</b>	<b>41,947</b>	<b>42,529</b>		
<b>Manufacturing</b>		<b>61,737</b>	<b>62,417</b>	<b>63,705</b>	<b>64,595</b>		
		Previous year		Year-to-date		Average per month	
		July 2002	June 2002	% Change from 2002	Average 2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	4,722	4,763	1.7	4,824	3.4	4,832
Beverage and tobacco product manufacturing	312	1,700	1,763	3.0	1,773	5.0	1,717
Textile mills	313	469	474	-9.3	458	-9.3	486
Textile product mills	314	344	333	-2.4	317	-13.1	324
Clothing manufacturing	315	1,216	1,259	3.3	1,224	-12.5	1,174
Leather and allied product manufacturing	316	160	157	-4.4	134	-8.9	137
Wood product manufacturing	321	4,085	4,155	3.4	4,780	-6.3	4,449
Paper manufacturing	322	3,520	3,487	0.1	3,598	-7.0	3,548
Printing and related support activities	323	684	680	-1.6	693	-5.7	702
Petroleum and coal products manufacturing	324	1,652	1,566	2.5	1,681	-10.6	1,614
Chemical manufacturing	325	5,182	5,049	14.8	5,953	4.0	5,277
Plastics and rubber products manufacturing	326	2,012	2,022	8.4	2,186	0.8	2,039
Non-metallic mineral product manufacturing	327	1,230	1,227	-0.2	1,227	2.0	1,206
Primary metal manufacturing	331	4,525	4,483	8.4	4,869	0.4	4,657
Fabricated metal product manufacturing	332	3,581	3,553	4.4	3,646	2.1	3,492
Machinery manufacturing	333	4,586	4,473	-2.4	4,519	1.2	4,609
Computer and electronic product manufacturing	334	4,499	4,489	-11.6	4,260	-22.5	4,654
Electrical equipment, appliance and component manufacturing	335	1,400	1,395	-2.3	1,366	-16.3	1,384
Transportation equipment manufacturing	336	13,118	13,379	0.7	13,284	-1.3	13,441
Motor vehicle manufacturing	3361	1,733	1,594	-12.7	1,495	2.9	1,730
Motor vehicle body and trailer manufacturing	3362	405	408	14.8	475	-6.3	417
Motor vehicle parts manufacturing	3363	1,795	1,762	12.1	1,941	3.9	1,762
Aerospace product and parts manufacturing	3364	7,532	7,938	2.3	7,847	0.3	7,817
Railroad rolling stock manufacturing	3365	1,324	1,291	-6.2	1,205	-14.0	1,338
Ship and boat building	3366	109	115	-21.0	124	-35.7	145
Furniture and related product manufacturing	337	1,434	1,403	9.4	1,526	1.1	1,427
Miscellaneous manufacturing	339	1,084	1,079	1.0	1,044	3.3	1,059
<b>Non-durable goods industries</b>		<b>20,445</b>	<b>20,294</b>	<b>5.1</b>	<b>21,617</b>	<b>-0.7</b>	<b>20,676</b>
<b>Durable goods industries</b>		<b>40,760</b>	<b>40,896</b>	<b>0.6</b>	<b>41,746</b>	<b>-4.7</b>	<b>41,553</b>
<b>Manufacturing</b>		<b>61,205</b>	<b>61,190</b>	<b>2.1</b>	<b>63,364</b>	<b>-3.4</b>	<b>62,229</b>



**Table 5**  
**Inventories by major group and selected industries - concluded**

	NAICS Code	Change from June	Seasonally adjusted						
			Current periods						
			July 2003	June 2003	May 2003	April 2003			
			\$ millions						
Food manufacturing	311	15	4,874	4,858	4,842	4,876			
Beverage and tobacco product manufacturing	312	33	1,771	1,738	1,749	1,756			
Textile mills	313	5	464	459	453	456			
Textile product mills	314	-2	312	314	320	322			
Clothing manufacturing	315	7	1,216	1,208	1,202	1,214			
Leather and allied product manufacturing	316	-2	132	133	130	130			
Wood product manufacturing	321	-3	4,592	4,595	4,673	4,661			
Paper manufacturing	322	-49	3,590	3,638	3,563	3,568			
Printing and related support activities	323	2	725	724	712	710			
Petroleum and coal products manufacturing	324	89	1,748	1,659	1,606	1,727			
Chemical manufacturing	325	-183	5,929	6,112	6,072	5,920			
Plastics and rubber products manufacturing	326	-15	2,144	2,159	2,208	2,181			
Non-metallic mineral product manufacturing	327	-10	1,188	1,198	1,205	1,206			
Primary metal manufacturing	331	-68	4,748	4,816	4,955	4,993			
Fabricated metal product manufacturing	332	-9	3,606	3,615	3,656	3,692			
Machinery manufacturing	333	-171	4,374	4,544	4,631	4,528			
Computer and electronic product manufacturing	334	10	4,159	4,149	4,284	4,267			
Electrical equipment, appliance and component manufacturing	335	-7	1,315	1,323	1,362	1,406			
Transportation equipment manufacturing	336	165	13,258	13,093	13,309	13,729			
Motor vehicle manufacturing	3361	-72	1,309	1,381	1,445	1,503			
Motor vehicle body and trailer manufacturing	3362	-7	462	469	458	457			
Motor vehicle parts manufacturing	3363	3	1,928	1,925	1,955	1,986			
Aerospace product and parts manufacturing	3364	147	8,066	7,919	7,989	8,263			
Railroad rolling stock manufacturing	3365	109	1,204	1,095	1,142	1,196			
Ship and boat building	3366	0	120	120	123	125			
Furniture and related product manufacturing	337	25	1,554	1,529	1,520	1,513			
Miscellaneous manufacturing	339	1	991	990	1,006	1,043			
<b>Non-durable goods industries</b>		<b>-105</b>	<b>21,689</b>	<b>21,795</b>	<b>21,655</b>	<b>21,646</b>			
<b>Durable goods industries</b>		<b>-60</b>	<b>41,001</b>	<b>41,061</b>	<b>41,803</b>	<b>42,252</b>			
<b>Manufacturing</b>		<b>-165</b>	<b>62,690</b>	<b>62,855</b>	<b>63,457</b>	<b>63,898</b>			
			Change from previous month		Trend change from previous month				
			July 2003	June 2003	May 2003	July 2003	June 2003	May 2003	April 2003
			percentage						
Food manufacturing	311	0.3	0.3	-0.7	-0.1	-0.1	-0.2	-0.2	-0.2
Beverage and tobacco product manufacturing	312	1.9	-0.6	-0.4	0.2	0.2	0.1	0.1	0.1
Textile mills	313	1.2	1.2	-0.6	0.4	0.4	0.4	0.4	0.2
Textile product mills	314	-0.6	-1.8	-0.7	-0.4	-0.3	-0.2	0.0	0.0
Clothing manufacturing	315	0.6	0.5	-1.0	0.0	0.0	0.1	0.2	0.2
Leather and allied product manufacturing	316	-1.2	2.9	-0.1	0.1	0.1	0.0	-0.2	-0.2
Wood product manufacturing	321	-0.1	-1.7	0.3	-0.1	0.0	0.2	0.4	0.4
Paper manufacturing	322	-1.3	2.1	-0.1	0.2	0.3	0.3	0.3	0.3
Printing and related support activities	323	0.2	1.7	0.2	0.7	0.9	1.0	1.0	1.0
Petroleum and coal products manufacturing	324	5.4	3.3	-7.0	0.8	1.1	1.1	1.2	1.2
Chemical manufacturing	325	-3.0	0.7	2.6	0.2	0.5	0.8	1.1	1.1
Plastics and rubber products manufacturing	326	-0.7	-2.2	1.2	-0.3	-0.2	-0.1	0.1	0.1
Non-metallic mineral product manufacturing	327	-0.8	-0.6	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
Primary metal manufacturing	331	-1.4	-2.8	-0.7	-0.7	-0.8	-0.6	-0.4	-0.4
Fabricated metal product manufacturing	332	-0.3	-1.1	-1.0	-0.2	-0.1	0.1	0.3	0.3
Machinery manufacturing	333	-3.8	-1.9	2.3	-0.3	-0.3	-0.4	-0.4	-0.4
Computer and electronic product manufacturing	334	0.2	-3.1	0.4	-0.4	-0.6	-0.7	-0.8	-0.8
Electrical equipment, appliance and component manufacturing	335	-0.6	-2.9	-3.1	-0.7	-0.7	-0.5	-0.3	-0.3
Transportation equipment manufacturing	336	1.3	-1.6	-3.1	-0.3	-0.4	-0.5	-0.5	-0.5
Motor vehicle manufacturing	3361	-5.2	-4.4	-3.9	-2.6	-3.0	-3.4	-3.4	-3.4
Motor vehicle body and trailer manufacturing	3362	-1.5	2.3	0.2	-0.5	-0.4	-0.1	0.3	0.3
Motor vehicle parts manufacturing	3363	0.2	-1.5	-1.6	-0.1	0.0	0.1	0.4	0.4
Aerospace product and parts manufacturing	3364	1.9	-0.9	-3.3	0.3	0.4	0.4	0.5	0.5
Railroad rolling stock manufacturing	3365	9.9	-4.1	-4.5	-1.4	-2.4	-3.1	-3.6	-3.6
Ship and boat building	3366	-0.1	-2.6	-1.2	-0.6	-0.8	-1.0	-1.0	-1.0
Furniture and related product manufacturing	337	1.6	0.6	0.4	0.3	0.3	0.3	0.4	0.4
Miscellaneous manufacturing	339	0.1	-1.6	-3.6	-1.1	-1.4	-1.7	-1.7	-1.7
<b>Non-durable goods industries</b>		<b>-0.5</b>	<b>0.6</b>	<b>0.0</b>	<b>0.2</b>	<b>0.3</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>
<b>Durable goods industries</b>		<b>-0.1</b>	<b>-1.8</b>	<b>-1.1</b>	<b>-0.3</b>	<b>-0.4</b>	<b>-0.4</b>	<b>-0.3</b>	<b>-0.3</b>
<b>Manufacturing</b>		<b>-0.3</b>	<b>-0.9</b>	<b>-0.7</b>	<b>-0.2</b>	<b>-0.1</b>	<b>-0.1</b>	<b>0.0</b>	<b>0.0</b>

**Table 6**  
**Unfilled orders by selected major group and industries**

	NAICS Code	Unadjusted					
		Current periods					
		July 2003	June 2003	May 2003	April 2003		
\$ millions							
Textile mills	313	210	213	220	233		
Textile product mills	314	60	55	62	72		
Clothing manufacturing	315	340	352	350	357		
Leather and allied product manufacturing	316	36	41	36	36		
Plastics and rubber products manufacturing	326	1,022	1,018	1,198	1,290		
Primary metal manufacturing	331	1,631	1,629	1,690	1,705		
Fabricated metal product manufacturing	332	2,743	2,708	2,705	2,753		
Machinery manufacturing	333	6,113	6,003	6,237	7,009		
Computer and electronic product manufacturing	334	3,544	3,578	3,910	3,895		
Electrical equipment, appliance and component manufacturing	335	939	919	1,005	1,014		
Transportation equipment manufacturing	336	19,233	19,618	19,752	19,935		
Motor vehicle manufacturing	3361	773	766	759	812		
Motor vehicle body and trailer manufacturing	3362	564	584	620	619		
Motor vehicle parts manufacturing	3363	805	817	822	818		
Aerospace product and parts manufacturing	3364	11,950	12,164	12,640	12,675		
Ship and boat building	3366	49	51	53	55		
Miscellaneous manufacturing	339	162	161	162	158		
<b>Non-durable goods industries</b>		<b>2,873</b>	<b>2,806</b>	<b>2,863</b>	<b>3,052</b>		
<b>Durable goods industries</b>		<b>36,249</b>	<b>36,403</b>	<b>37,208</b>	<b>38,263</b>		
<b>Manufacturing</b>		<b>39,122</b>	<b>39,209</b>	<b>40,071</b>	<b>41,315</b>		
		Previous year		Year-to-date		Average per month	
		July 2002	June 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
Textile mills	313	274	280	-15.8	236	9.3	276
Textile product mills	314	51	52	31.5	67	2.7	55
Clothing manufacturing	315	356	352	-5.2	329	-7.0	324
Leather and allied product manufacturing	316	42	45	-8.4	32	-18.2	31
Plastics and rubber products manufacturing	326	1,188	1,057	1.8	1,202	15.6	1,254
Primary metal manufacturing	331	1,798	1,896	-6.3	1,689	25.1	1,795
Fabricated metal product manufacturing	332	2,873	2,871	-3.7	2,786	0.3	2,878
Machinery manufacturing	333	6,679	6,713	-4.0	6,531	4.3	6,709
Computer and electronic product manufacturing	334	4,261	4,136	0.9	3,884	-8.4	3,977
Electrical equipment, appliance and component manufacturing	335	973	955	4.4	995	-30.5	977
Transportation equipment manufacturing	336	25,607	25,687	-21.3	20,303	-8.7	25,566
Motor vehicle manufacturing	3361	1,058	1,041	-17.8	829	4.2	1,052
Motor vehicle body and trailer manufacturing	3362	588	602	3.5	620	8.4	590
Motor vehicle parts manufacturing	3363	718	656	29.9	845	24.2	729
Aerospace product and parts manufacturing	3364	17,966	18,078	-29.9	12,958	-12.0	17,877
Ship and boat building	3366	16	16	152.3	43	-37.0	18
Miscellaneous manufacturing	339	171	181	-17.5	174	-12.1	226
<b>Non-durable goods industries</b>		<b>2,823</b>	<b>2,647</b>	<b>6.9</b>	<b>2,949</b>	<b>15.3</b>	<b>2,867</b>
<b>Durable goods industries</b>		<b>44,062</b>	<b>44,109</b>	<b>-13.1</b>	<b>38,111</b>	<b>-5.4</b>	<b>43,740</b>
<b>Manufacturing</b>		<b>46,885</b>	<b>46,755</b>	<b>-11.9</b>	<b>41,059</b>	<b>-4.3</b>	<b>46,606</b>

Table 6

## Unfilled orders by selected major group and industries - concluded

	NAICS Code	Change from June	Seasonally adjusted					
			Current periods					
			July 2003	June 2003	May 2003	April 2003		
			\$ millions					
Textile mills	313	0	216	215	218	223		
Textile product mills	314	6	61	55	65	68		
Clothing manufacturing	315	-3	315	318	320	327		
Leather and allied product manufacturing	316	-1	27	28	26	28		
Plastics and rubber products manufacturing	326	-80	1,146	1,226	1,292	1,308		
Primary metal manufacturing	331	25	1,613	1,588	1,605	1,627		
Fabricated metal product manufacturing	332	35	2,743	2,708	2,705	2,753		
Machinery manufacturing	333	110	6,113	6,003	6,237	7,009		
Computer and electronic product manufacturing	334	-34	3,544	3,578	3,910	3,895		
Electrical equipment, appliance and component manufacturing	335	20	939	919	1,005	1,014		
Transportation equipment manufacturing	336	-664	19,053	19,717	19,718	20,330		
Motor vehicle manufacturing	3361	8	773	766	759	812		
Motor vehicle body and trailer manufacturing	3362	-8	583	591	601	564		
Motor vehicle parts manufacturing	3363	-48	798	846	851	868		
Aerospace product and parts manufacturing	3364	-473	11,756	12,229	12,602	13,076		
Ship and boat building	3366	1	50	49	48	55		
Miscellaneous manufacturing	339	-6	178	184	174	164		
<b>Non-durable goods industries</b>		<b>-9</b>	<b>2,996</b>	<b>3,005</b>	<b>2,946</b>	<b>3,048</b>		
<b>Durable goods industries</b>		<b>-454</b>	<b>35,980</b>	<b>36,434</b>	<b>37,103</b>	<b>38,582</b>		
<b>Manufacturing</b>		<b>-464</b>	<b>38,976</b>	<b>39,439</b>	<b>40,050</b>	<b>41,630</b>		
			Change from previous month		Trend change from previous month			
			July 2003	June 2003	July 2003	June 2003	May 2003	April 2003
			percentage					
Textile mills	313	0.2	-1.0	-2.4	-1.6	-2.6	-3.6	-4.2
Textile product mills	314	10.8	-14.7	-5.1	-5.0	-4.4	-3.4	-2.1
Clothing manufacturing	315	-0.9	-0.5	-2.2	0.4	0.7	0.9	1.1
Leather and allied product manufacturing	316	-4.7	9.6	-7.1	-1.6	-2.3	-3.2	-3.8
Plastics and rubber products manufacturing	326	-6.5	-5.1	-1.3	-1.8	-1.9	-1.7	-1.4
Primary metal manufacturing	331	1.6	-1.1	-1.4	-1.8	-2.1	-2.4	-2.6
Fabricated metal product manufacturing	332	1.3	0.1	-1.7	-0.3	-0.5	-0.6	-0.7
Machinery manufacturing	333	1.8	-3.8	-11.0	-1.1	-1.2	-1.2	-1.0
Computer and electronic product manufacturing	334	-0.9	-8.5	0.4	-1.9	-2.6	-2.9	-2.8
Electrical equipment, appliance and component manufacturing	335	2.2	-8.5	-0.9	-1.6	-1.5	-1.3	-0.9
Transportation equipment manufacturing	336	-3.4	0.0	-3.0	-1.3	-1.9	-2.6	-3.1
Motor vehicle manufacturing	3361	1.0	1.0	-6.6	-0.5	-1.7	-3.1	-4.4
Motor vehicle body and trailer manufacturing	3362	-1.4	-1.7	6.6	-0.4	-0.5	-0.5	-0.6
Motor vehicle parts manufacturing	3363	-5.7	-0.6	-1.9	-0.6	-0.8	-0.8	-0.6
Aerospace product and parts manufacturing	3364	-3.9	-3.0	-3.6	-2.3	-3.0	-3.6	-4.1
Ship and boat building	3366	2.4	1.1	-12.2	4.4	6.4	8.3	10.5
Miscellaneous manufacturing	339	-3.5	6.2	5.6	0.0	-0.9	-2.2	-3.6
<b>Non-durable goods industries</b>		<b>-0.3</b>	<b>2.0</b>	<b>-3.3</b>	<b>-0.3</b>	<b>-0.4</b>	<b>-0.3</b>	<b>-0.2</b>
<b>Durable goods industries</b>		<b>-1.2</b>	<b>-1.8</b>	<b>-3.8</b>	<b>-1.2</b>	<b>-1.6</b>	<b>-2.0</b>	<b>-2.3</b>
<b>Manufacturing</b>		<b>-1.2</b>	<b>-1.5</b>	<b>-3.8</b>	<b>-1.1</b>	<b>-1.5</b>	<b>-1.9</b>	<b>-2.2</b>

**Table 7**  
**New orders by selected major group and industries**

	NAICS Code	Unadjusted					
		Current periods					
		July 2003	June 2003	May 2003	April 2003		
		\$ millions					
Textile mills	313	197	252	253	251		
Textile product mills	314	193	194	203	192		
Clothing manufacturing	315	488	438	472	529		
Leather and allied product manufacturing	316	42	46	49	49		
Plastics and rubber products manufacturing	326	1,886	1,838	1,991	2,040		
Primary metal manufacturing	331	2,507	2,567	2,734	2,823		
Fabricated metal product manufacturing	332	2,316	2,435	2,323	2,201		
Machinery manufacturing	333	1,970	1,640	1,214	1,690		
Computer and electronic product manufacturing	334	1,269	1,340	1,448	1,190		
Electrical equipment, appliance and component manufacturing	335	723	714	763	735		
Transportation equipment manufacturing	336	6,395	9,949	10,247	9,728		
Motor vehicle manufacturing	3361	3,462	5,710	5,956	5,819		
Motor vehicle body and trailer manufacturing	3362	193	197	263	243		
Motor vehicle parts manufacturing	3363	1,850	2,696	2,728	2,624		
Aerospace product and parts manufacturing	3364	636	480	923	514		
Ship and boat building	3366	73	81	114	122		
Miscellaneous manufacturing	339	450	456	459	437		
<b>Non-durable goods industries</b>		18,547	18,757	19,259	18,656		
<b>Durable goods industries</b>		20,755	24,187	24,200	23,674		
<b>Manufacturing</b>		39,301	42,944	43,459	42,330		
		Previous year		Year-to-date		Annual	
		July 2002	June 2002	% Change from 2002	2003	% Change from 2001	2002
		\$ millions					
Textile mills	313	214	284	-14.9	1,665	-0.8	3,253
Textile product mills	314	202	217	-8.4	1,351	2.0	2,527
Clothing manufacturing	315	543	491	-7.3	3,546	-2.2	6,769
Leather and allied product manufacturing	316	49	54	-13.8	333	-10.6	770
Plastics and rubber products manufacturing	326	1,999	1,993	-0.1	13,320	6.2	23,082
Primary metal manufacturing	331	2,465	2,616	0.6	19,176	10.9	32,658
Fabricated metal product manufacturing	332	2,186	2,363	0.1	15,874	2.6	27,584
Machinery manufacturing	333	1,760	2,082	-6.6	12,929	-3.3	23,507
Computer and electronic product manufacturing	334	1,802	2,237	-25.5	9,727	-8.9	21,693
Electrical equipment, appliance and component manufacturing	335	745	781	-3.8	5,178	1.6	9,275
Transportation equipment manufacturing	336	6,932	9,985	-7.3	63,933	3.6	117,133
Motor vehicle manufacturing	3361	3,544	5,833	-2.0	37,796	6.4	65,879
Motor vehicle body and trailer manufacturing	3362	187	225	-1.5	1,637	8.7	2,741
Motor vehicle parts manufacturing	3363	2,082	2,869	-4.5	18,221	11.0	33,006
Aerospace product and parts manufacturing	3364	713	638	-49.4	2,831	-39.5	9,017
Ship and boat building	3366	101	171	-27.8	653	24.0	1,248
Miscellaneous manufacturing	339	452	444	0.2	3,052	8.5	5,508
<b>Non-durable goods industries</b>		<b>18,609</b>	<b>18,538</b>	<b>5.5</b>	<b>130,293</b>	<b>1.0</b>	<b>218,796</b>
<b>Durable goods industries</b>		<b>21,407</b>	<b>25,626</b>	<b>-6.1</b>	<b>163,648</b>	<b>3.2</b>	<b>297,812</b>
<b>Manufacturing</b>		<b>40,016</b>	<b>44,165</b>	<b>-1.3</b>	<b>293,941</b>	<b>2.3</b>	<b>516,608</b>

Table 7

## New orders by selected major group and industries - concluded

	NAICS Code	Change from June	Seasonally adjusted						
			Current periods						
			July 2003	June 2003	May 2003	April 2003			
\$ millions									
Textile mills	313	3	243	240	241	247			
Textile product mills	314	20	203	183	191	187			
Clothing manufacturing	315	21	519	498	511	528			
Leather and allied product manufacturing	316	-1	54	55	53	54			
Plastics and rubber products manufacturing	326	59	1,883	1,824	1,885	1,941			
Primary metal manufacturing	331	119	2,713	2,594	2,613	2,696			
Fabricated metal product manufacturing	332	33	2,389	2,356	2,229	2,223			
Machinery manufacturing	333	500	2,067	1,568	1,170	1,677			
Computer and electronic product manufacturing	334	135	1,371	1,236	1,473	1,322			
Electrical equipment, appliance and component manufacturing	335	88	768	680	744	739			
Transportation equipment manufacturing	336	-254	9,318	9,572	9,055	9,258			
Motor vehicle manufacturing	3361	404	5,721	5,317	5,440	5,430			
Motor vehicle body and trailer manufacturing	3362	13	226	213	268	199			
Motor vehicle parts manufacturing	3363	-65	2,496	2,561	2,501	2,558			
Aerospace product and parts manufacturing	3364	-80	556	636	514	525			
Ship and boat building	3366	6	84	78	77	105			
Miscellaneous manufacturing	339	-11	449	459	446	441			
<b>Non-durable goods industries</b>		<b>66</b>	<b>18,461</b>	<b>18,395</b>	<b>18,401</b>	<b>18,786</b>			
<b>Durable goods industries</b>		<b>795</b>	<b>24,025</b>	<b>23,230</b>	<b>22,414</b>	<b>23,182</b>			
<b>Manufacturing</b>		<b>862</b>	<b>42,486</b>	<b>41,625</b>	<b>40,815</b>	<b>41,967</b>			
			Change from previous month		Trend change from previous month				
			July 2003	June 2003	May 2003	July 2003	June 2003	May 2003	April 2003
percentage									
Textile mills	313	1.1	-0.3	-2.4	0.7	0.5	0.2	-0.4	
Textile product mills	314	10.9	-4.3	2.3	0.1	-0.2	-0.7	-1.2	
Clothing manufacturing	315	4.2	-2.4	-3.4	-0.6	-1.0	-1.4	-1.7	
Leather and allied product manufacturing	316	-2.1	2.9	-1.3	0.3	0.0	-0.8	-1.8	
Plastics and rubber products manufacturing	326	3.2	-3.3	-2.9	-0.6	-0.8	-0.9	-0.8	
Primary metal manufacturing	331	4.6	-0.7	-3.1	-0.9	-1.2	-1.4	-1.4	
Fabricated metal product manufacturing	332	1.4	5.7	0.3	0.6	0.6	0.4	0.1	
Machinery manufacturing	333	31.9	34.1	-30.2	0.7	0.6	-0.5	-1.7	
Computer and electronic product manufacturing	334	10.9	-16.1	11.4	0.9	-0.6	-2.1	-3.2	
Electrical equipment, appliance and component manufacturing	335	13.0	-8.7	0.7	-0.1	-0.3	-0.6	-0.7	
Transportation equipment manufacturing	336	-2.7	5.7	-2.2	1.8	1.8	1.5	0.9	
Motor vehicle manufacturing	3361	7.6	-2.3	0.2	1.2	1.1	0.9	0.5	
Motor vehicle body and trailer manufacturing	3362	6.3	-20.5	34.9	0.7	0.4	0.1	0.0	
Motor vehicle parts manufacturing	3363	-2.5	2.4	-2.3	-0.6	-1.0	-1.3	-1.6	
Aerospace product and parts manufacturing	3364	-12.6	23.9	-2.1	15.7	18.6	18.7	13.8	
Ship and boat building	3366	7.1	1.7	-26.8	-0.1	0.3	0.7	1.1	
Miscellaneous manufacturing	339	-2.3	2.9	1.2	0.4	0.3	0.1	-0.2	
<b>Non-durable goods industries</b>		<b>0.4</b>	<b>0.0</b>	<b>-2.0</b>	<b>-0.5</b>	<b>-0.6</b>	<b>-0.7</b>	<b>-0.6</b>	
<b>Durable goods industries</b>		<b>3.4</b>	<b>3.6</b>	<b>-3.3</b>	<b>0.8</b>	<b>0.6</b>	<b>0.2</b>	<b>-0.3</b>	
<b>Manufacturing</b>		<b>2.1</b>	<b>2.0</b>	<b>-2.7</b>	<b>0.3</b>	<b>0.1</b>	<b>-0.2</b>	<b>-0.5</b>	

**Table 8a**  
**Shipments for selected industries, unadjusted**

	NAICS Code	Current periods			
		July 2003	June 2003	May 2003	April 2003
\$ millions					
<b>Food manufacturing</b>	<b>311</b>				
Animal food manufacturing	3111	434	406	443	434
Starch and vegetable fat and oil manufacturing	31122	261	238	275	264
Sugar and confectionery product manufacturing	3113	327	326	333	348
Fruit and vegetable preserving and specialty food manufacturing	3114	452	445	472	470
Dairy product manufacturing	3115	981	976	974	915
Meat product manufacturing	3116	1,321	1,302	1,449	1,409
Cookie, cracker and pasta manufacturing	31182	105	110	113	116
Other food manufacturing	3119	508	531	530	516
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>				
Soft drink and ice manufacturing	31211	400	388	381	329
Breweries	31212	449	414	382	309
Wineries	31213	50	50	49	42
Distilleries	31214	68	69	71	101
Tobacco manufacturing	3122	343	354	326	288
<b>Textile mills</b>	<b>313</b>				
Fibre, yarn and thread mills	3131	24	33	35	37
Fabric mills	3132	132	170	176	171
Textile and fabric finishing and fabric coating	3133	45	56	55	52
<b>Textile product mills</b>	<b>314</b>				
Carpet and rug mills	31411	62	73	78	75
Textile bag and canvas mills	31491	33	31	30	25
<b>Clothing manufacturing</b>	<b>315</b>				
Hosiery and sock mills	31511	36	35	41	36
Other clothing knitting mills	31519	47	41	40	41
Men's and boys' cut and sew clothing manufacturing	31522	168	150	164	167
Women's and girls' cut and sew clothing manufacturing	31523	173	137	151	179
Clothing accessories and other clothing manufacturing	3159	21	20	22	19
<b>Leather and allied product manufacturing</b>	<b>316</b>				
Footwear manufacturing	3162	31	25	27	22
<b>Wood product manufacturing</b>	<b>321</b>				
Sawmills and wood preservation	3211	1,196	1,276	1,294	1,303
Veneer, plywood and engineered wood product manufacturing	3212	628	576	557	540
Other wood product manufacturing	3219	517	541	555	500
<b>Paper manufacturing</b>	<b>322</b>				
Pulp, paper and paperboard mills	3221	1,807	1,771	1,852	1,919
Paperboard container manufacturing	32221	456	440	459	449
Paper bag and coated and treated paper manufacturing	32222	160	167	177	181
Other converted paper product manufacturing	32229	138	137	148	133
<b>Printing and related support activities</b>	<b>323</b>				
Printing	32311	740	764	813	818
Support activities for printing	32312	37	39	45	44
<b>Petroleum and coal products manufacturing</b>	<b>324</b>				
Petroleum refineries	32411	2,641	2,465	2,540	2,582
<b>Chemical manufacturing</b>	<b>325</b>				
Other basic inorganic chemical manufacturing	32518	247	241	246	232
Other basic organic chemical manufacturing	32519	178	221	219	241
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	513	541	569	579
Pesticide and other agricultural chemical manufacturing	32532	20	86	74	71
Pharmaceutical and medicine manufacturing	3254	749	798	753	739
Paint and coating manufacturing	32551	175	188	180	168
Adhesive manufacturing	32552	60	57	68	61
Soap and cleaning compound manufacturing	32561	116	119	115	120
Toilet preparation manufacturing	32562	144	158	138	146
Printing ink manufacturing	32591	30	33	35	37
All other chemical product manufacturing	32599	347	333	347	348

Table 8a

## Shipments for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		July 2003	June 2003	May 2003	April 2003
		\$ millions			
<b>Plastics and rubber products manufacturing</b>	<b>326</b>				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	172	167	164	158
Polystyrene foam product manufacturing	32614	35	34	29	27
Other plastic product manufacturing	32619	785	849	891	866
Other rubber product manufacturing	32629	177	200	208	208
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>				
Clay product and refractory manufacturing	3271	60	61	66	58
Glass and glass product manufacturing	3272	194	220	224	209
Cement manufacturing	32731	161	154	140	106
Ready-mix concrete manufacturing	32732	278	262	231	162
Other concrete product manufacturing	32739	119	113	105	76
Abrasive product manufacturing	32791	32	32	37	37
All other non-metallic mineral product manufacturing	32799	116	115	121	128
<b>Primary metal manufacturing</b>	<b>331</b>				
Iron and steel mills and ferro-alloy manufacturing	3311	807	843	902	926
Iron and steel pipes and tubes manufacturing from purchased steel	33121	214	214	214	206
Foundries	3315	200	280	282	272
<b>Fabricated metal product manufacturing</b>	<b>332</b>				
Cutlery and hand tool manufacturing	3322	41	43	48	46
Plate work and fabricated structural product manufacturing	33231	389	367	312	321
Power boiler and heat exchanger manufacturing	33241	90	186	104	100
Spring and wire product manufacturing	3326	97	114	120	115
Coating, engraving, heat treating and allied activities	3328	180	207	223	234
Other fabricated metal product manufacturing	3329	230	248	257	265
<b>Machinery manufacturing</b>	<b>333</b>				
Agricultural implement manufacturing	33311	152	166	185	219
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	176	181	178	191
All other general-purpose machinery manufacturing	33399	139	124	146	150
<b>Computer and electronic product manufacturing</b>	<b>334</b>				
Computer and peripheral equipment manufacturing	3341	253	380	284	241
Communications equipment manufacturing	3342	347	558	363	384
Audio and video equipment manufacturing	3343	15	15	15	18
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>				
Lighting fixture manufacturing	33512	68	68	70	62
Small electrical appliance manufacturing	33521	20	19	21	19
Major appliance manufacturing	33522	113	133	132	133
Battery manufacturing	33591	12	12	12	12
Communication and energy wire and cable manufacturing	33592	92	108	96	95
All other electrical equipment and component manufacturing	33599	63	66	74	63
<b>Transportation equipment manufacturing</b>	<b>336</b>				
Motor vehicle manufacturing	3361	3,455	5,702	6,010	5,868
Motor vehicle parts manufacturing	3363	1,862	2,702	2,723	2,670
Aerospace product and parts manufacturing	3364	851	956	958	1,221
Railroad rolling stock manufacturing	3365	168	273	258	234
Ship and boat building	3366	75	84	115	99
<b>Furniture and related product manufacturing</b>	<b>337</b>				
Household and institutional furniture and kitchen cabinet manufacturing	3371	555	592	600	590
Office furniture (including fixtures) manufacturing	3372	377	389	370	381
<b>Miscellaneous manufacturing</b>	<b>339</b>				
Medical equipment and supplies manufacturing	3391	117	129	115	109
Other miscellaneous manufacturing	3399	332	329	340	341

Table 8a

## Shipments for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Annual	
		July 2002	June 2002	% Change from 2002	2003	% Change from 2001	2002
\$ millions							
<b>Food manufacturing</b>	<b>311</b>						
Animal food manufacturing	3111	457	439	-3.5	2,994	6.1	5,392
Starch and vegetable fat and oil manufacturing	31122	228	214	13.5	1,767	3.3	2,811
Sugar and confectionery product manufacturing	3113	303	312	9.9	2,237	1.4	3,846
Fruit and vegetable preserving and specialty food manufacturing	3114	479	453	-2.7	3,238	-1.7	5,923
Dairy product manufacturing	3115	861	827	11.8	6,351	1.2	9,887
Meat product manufacturing	3116	1,496	1,554	-6.4	9,665	-6.6	17,674
Cookie, cracker and pasta manufacturing	31182	107	111	-3.9	770	-7.7	1,425
Other food manufacturing	3119	484	472	8.3	3,434	11.9	5,723
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>						
Soft drink and ice manufacturing	31211	401	358	9.2	2,293	5.2	3,688
Breweries	31212	431	409	-0.4	2,316	2.0	4,103
Wineries	31213	52	57	2.9	308	11.8	585
Distilleries	31214	107	107	-10.0	596	9.1	1,265
Tobacco manufacturing	3122	285	347	0.9	2,178	1.3	3,663
<b>Textile mills</b>	<b>313</b>						
Fibre, yarn and thread mills	3131	31	41	-15.1	235	-5.0	465
Fabric mills	3132	138	183	-7.8	1,129	-3.2	2,067
Textile and fabric finishing and fabric coating	3133	50	60	-11.5	353	-4.1	678
<b>Textile product mills</b>	<b>314</b>						
Carpet and rug mills	31411	63	81	-2.9	499	-3.6	890
Textile bag and canvas mills	31491	44	41	-31.8	183	7.2	429
<b>Clothing manufacturing</b>	<b>315</b>						
Hosiery and sock mills	31511	41	36	-5.5	262	0.4	511
Other clothing knitting mills	31519	44	29	26.7	292	0.1	519
Men's and boys' cut and sew clothing manufacturing	31522	175	172	-8.6	1,179	-4.9	2,360
Women's and girls' cut and sew clothing manufacturing	31523	180	152	-7.5	1,190	-3.7	2,221
Clothing accessories and other clothing manufacturing	3159	18	19	1.1	134	-4.0	242
<b>Leather and allied product manufacturing</b>	<b>316</b>						
Footwear manufacturing	3162	33	29	-18.0	184	-5.8	518
<b>Wood product manufacturing</b>	<b>321</b>						
Sawmills and wood preservation	3211	1,433	1,491	-18.4	8,860	4.4	17,697
Veneer, plywood and engineered wood product manufacturing	3212	499	538	5.6	3,821	6.1	6,230
Other wood product manufacturing	3219	467	481	13.7	3,477	18.2	5,571
<b>Paper manufacturing</b>	<b>322</b>						
Pulp, paper and paperboard mills	3221	2,008	1,945	-3.4	12,975	-6.8	23,505
Paperboard container manufacturing	32221	399	394	14.6	3,113	3.4	4,914
Paper bag and coated and treated paper manufacturing	32222	175	191	-5.9	1,234	3.0	2,212
Other converted paper product manufacturing	32229	134	129	3.7	942	0.6	1,610
<b>Printing and related support activities</b>	<b>323</b>						
Printing	32311	742	760	0.3	5,480	-1.4	9,557
Support activities for printing	32312	42	43	-0.2	288	-37.0	504
<b>Petroleum and coal products manufacturing</b>	<b>324</b>						
Petroleum refineries	32411	2,504	2,272	27.4	19,640	0.8	29,276
<b>Chemical manufacturing</b>	<b>325</b>						
Other basic inorganic chemical manufacturing	32518	243	227	9.1	1,689	6.8	2,726
Other basic organic chemical manufacturing	32519	174	204	8.9	1,566	1.8	2,521
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	507	554	6.2	3,953	0.6	6,379
Pesticide and other agricultural chemical manufacturing	32532	10	58	26.3	390	-13.4	341
Pharmaceutical and medicine manufacturing	3254	733	664	12.0	5,136	22.0	8,402
Paint and coating manufacturing	32551	164	182	0.6	1,157	-1.4	1,875
Adhesive manufacturing	32552	52	55	3.3	394	12.2	624
Soap and cleaning compound manufacturing	32561	128	129	-5.1	839	-7.5	1,516
Toilet preparation manufacturing	32562	103	144	8.3	1,040	3.2	1,663
Printing ink manufacturing	32591	33	36	-1.0	237	13.3	419
All other chemical product manufacturing	32599	360	327	4.7	2,433	2.6	4,104



Table 8a

## Shipments for selected industries, unadjusted - continued

NAICS Code	Previous year		Year-to-date		Annual		
	July 2002	June 2002	% Change from 2002	2003	% Change from 2001	2002	
\$ millions							
<b>Plastics and rubber products manufacturing</b>	<b>326</b>						
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	158	169	4.8	1,055	4.2	1,758
Polystyrene foam product manufacturing	32614	30	29	6.3	196	3.8	321
Other plastic product manufacturing	32619	788	875	1.5	5,577	8.6	9,435
Other rubber product manufacturing	32629	172	215	-0.8	1,401	0.0	2,409
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>						
Clay product and refractory manufacturing	3271	56	56	10.9	389	5.0	613
Glass and glass product manufacturing	3272	193	213	2.5	1,402	6.2	2,396
Cement manufacturing	32731	154	145	0.3	760	5.7	1,425
Ready-mix concrete manufacturing	32732	251	239	3.4	1,242	9.1	2,337
Other concrete product manufacturing	32739	112	116	5.6	606	1.3	1,127
Abrasive product manufacturing	32791	33	36	3.5	254	36.5	450
All other non-metallic mineral product manufacturing	32799	110	106	16.8	803	28.8	1,314
<b>Primary metal manufacturing</b>	<b>331</b>						
Iron and steel mills and ferro-alloy manufacturing	3311	913	871	5.0	6,303	11.3	10,368
Iron and steel pipes and tubes manufacturing from purchased steel	33121	204	215	12.7	1,623	1.4	2,529
Foundries	3315	202	270	2.3	1,877	8.7	3,161
<b>Fabricated metal product manufacturing</b>	<b>332</b>						
Cutlery and hand tool manufacturing	3322	34	35	18.2	308	6.3	467
Plate work and fabricated structural product manufacturing	33231	361	354	-3.5	2,331	0.4	4,286
Power boiler and heat exchanger manufacturing	33241	77	91	31.1	742	7.6	1,022
Spring and wire product manufacturing	3326	111	123	-6.9	798	9.8	1,477
Coating, engraving, heat treating and allied activities	3328	182	217	2.8	1,529	20.0	2,633
Other fabricated metal product manufacturing	3329	248	251	0.0	1,742	9.5	3,005
<b>Machinery manufacturing</b>	<b>333</b>						
Agricultural implement manufacturing	33311	174	200	-13.7	1,276	6.1	2,323
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	188	194	-5.2	1,241	9.7	2,298
All other general-purpose machinery manufacturing	33399	200	190	-22.5	986	15.4	2,275
<b>Computer and electronic product manufacturing</b>	<b>334</b>						
Computer and peripheral equipment manufacturing	3341	412	487	-28.9	2,076	-16.6	4,699
Communications equipment manufacturing	3342	543	746	-32.3	2,908	-23.7	7,137
Audio and video equipment manufacturing	3343	18	15	-7.2	111	-7.2	218
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>						
Lighting fixture manufacturing	33512	76	73	-7.8	467	-3.7	877
Small electrical appliance manufacturing	33521	21	18	4.3	138	-9.3	250
Major appliance manufacturing	33522	122	134	-4.5	885	12.4	1,529
Battery manufacturing	33591	12	11	0.9	83	-15.1	139
Communication and energy wire and cable manufacturing	33592	126	123	-25.1	672	-42.2	1,436
All other electrical equipment and component manufacturing	33599	55	66	3.1	459	-2.3	772
<b>Transportation equipment manufacturing</b>	<b>336</b>						
Motor vehicle manufacturing	3361	3,527	5,831	-1.1	38,009	5.7	65,797
Motor vehicle parts manufacturing	3363	2,019	2,876	-3.6	18,284	10.2	32,741
Aerospace product and parts manufacturing	3364	825	1,083	-2.9	6,882	-15.0	12,472
Railroad rolling stock manufacturing	3365	189	254	8.0	1,745	5.4	2,878
Ship and boat building	3366	101	173	-30.7	627	20.6	1,242
<b>Furniture and related product manufacturing</b>	<b>337</b>						
Household and institutional furniture and kitchen cabinet manufacturing	3371	563	596	-4.0	4,027	7.7	7,133
Office furniture (including fixtures) manufacturing	3372	347	348	13.2	2,679	-6.0	4,319
<b>Miscellaneous manufacturing</b>	<b>339</b>						
Medical equipment and supplies manufacturing	3391	106	121	-5.0	803	5.3	1,432
Other miscellaneous manufacturing	3399	356	345	1.7	2,301	9.7	4,095

**Table 8b**  
**Inventory owned for selected industries, unadjusted**

	NAICS Code	Current periods			
		July 2003	June 2003	May 2003	April 2003
\$ millions					
<b>Food manufacturing</b>	<b>311</b>				
Animal food manufacturing	3111	285	275	263	272
Starch and vegetable fat and oil manufacturing	31122	173	171	167	208
Sugar and confectionery product manufacturing	3113	384	388	360	342
Fruit and vegetable preserving and specialty food manufacturing	3114	830	828	843	843
Dairy product manufacturing	3115	793	808	799	795
Meat product manufacturing	3116	768	781	779	842
Cookie, cracker and pasta manufacturing	31182	123	130	127	129
Other food manufacturing	3119	491	480	489	472
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>				
Soft drink and ice manufacturing	31211	267	274	282	264
Breweries	31212	177	180	183	174
Wineries	31213	217	219	212	214
Distilleries	31214	529	528	540	547
Tobacco manufacturing	3122	563	577	598	627
<b>Textile mills</b>	<b>313</b>				
Fibre, yarn and thread mills	3131	54	54	53	52
Fabric mills	3132	337	337	336	340
Textile and fabric finishing and fabric coating	3133	65	62	68	68
Textile product mills	314				
Carpet and rug mills	31411	83	84	85	88
Textile bag and canvas mills	31491	45	46	49	50
<b>Clothing manufacturing</b>	<b>315</b>				
Hosiery and sock mills	31511	153	159	151	151
Other clothing knitting mills	31519	133	135	129	125
Men's and boys' cut and sew clothing manufacturing	31522	422	438	418	410
Women's and girls' cut and sew clothing manufacturing	31523	372	363	327	313
Clothing accessories and other clothing manufacturing	3159	76	73	75	74
<b>Leather and allied product manufacturing</b>	<b>316</b>				
Footwear manufacturing	3162	114	107	95	87
Wood product manufacturing	321				
Sawmills and wood preservation	3211	2,695	2,726	2,969	3,364
Veneer, plywood and engineered wood product manufacturing	3212	663	682	722	764
Other wood product manufacturing	3219	857	877	888	890
<b>Paper manufacturing</b>	<b>322</b>				
Pulp, paper and paperboard mills	3221	2,491	2,513	2,521	2,546
Paperboard container manufacturing	32221	561	564	564	562
Paper bag and coated and treated paper manufacturing	32222	278	276	275	279
Other converted paper product manufacturing	32229	157	158	155	154
<b>Printing and related support activities</b>	<b>323</b>				
Printing	32311	707	693	691	704
Support activities for printing	32312	8	8	9	8
<b>Petroleum and coal products manufacturing</b>	<b>324</b>				
Petroleum refineries	32411	1,475	1,372	1,293	1,449
<b>Chemical manufacturing</b>	<b>325</b>				
Other basic inorganic chemical manufacturing	32518	192	194	193	192
Other basic organic chemical manufacturing	32519	174	152	163	164
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	571	584	632	625
Pesticide and other agricultural chemical manufacturing	32532	119	108	110	135
Pharmaceutical and medicine manufacturing	3254	3,076	3,259	3,225	3,169
Paint and coating manufacturing	32551	261	271	266	273
Adhesive manufacturing	32552	89	91	88	91
Soap and cleaning compound manufacturing	32561	104	107	112	105
Toilet preparation manufacturing	32562	194	186	193	191
Printing ink manufacturing	32591	53	53	52	49
All other chemical product manufacturing	32599	293	316	317	319

Table 8b

## Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		July 2003	June 2003	May 2003	April 2003
		\$ millions			
<b>Plastics and rubber products manufacturing</b>	<b>326</b>				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	222	226	230	235
Polystyrene foam product manufacturing	32614	35	37	38	39
Other plastic product manufacturing	32619	883	902	938	920
Other rubber product manufacturing	32629	181	182	191	193
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>				
Clay product and refractory manufacturing	3271	85	87	92	92
Glass and glass product manufacturing	3272	271	275	278	279
Cement manufacturing	32731	172	185	193	201
Ready-mix concrete manufacturing	32732	103	101	99	96
Other concrete product manufacturing	32739	98	93	94	93
Abrasive product manufacturing	32791	120	124	131	133
All other non-metallic mineral product manufacturing	32799	145	144	144	147
<b>Primary metal manufacturing</b>	<b>331</b>				
Iron and steel mills and ferro-alloy manufacturing	3311	2,024	2,002	2,045	2,072
Iron and steel pipes and tubes manufacturing from purchased steel	33121	591	603	632	624
Foundries	3315	282	292	307	297
<b>Fabricated metal product manufacturing</b>	<b>332</b>				
Cutlery and hand tool manufacturing	3322	75	79	80	82
Plate work and fabricated structural product manufacturing	33231	478	495	493	476
Power boiler and heat exchanger manufacturing	33241	154	164	187	191
Spring and wire product manufacturing	3326	150	156	156	156
Coating, engraving, heat treating and allied activities	3328	155	147	154	167
Other fabricated metal product manufacturing	3329	570	552	563	570
<b>Machinery manufacturing</b>	<b>333</b>				
Agricultural implement manufacturing	33311	478	524	526	548
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	362	376	370	347
All other general-purpose machinery manufacturing	33399	414	408	395	360
<b>Computer and electronic product manufacturing</b>	<b>334</b>				
Computer and peripheral equipment manufacturing	3341	549	565	592	576
Communications equipment manufacturing	3342	2,033	1,990	2,160	2,169
Audio and video equipment manufacturing	3343	50	53	56	57
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>				
Lighting fixture manufacturing	33512	136	129	131	139
Small electrical appliance manufacturing	33521	47	47	47	49
Major appliance manufacturing	33522	162	175	192	197
Battery manufacturing	33591	68	64	64	65
Communication and energy wire and cable manufacturing	33592	282	284	291	293
All other electrical equipment and component manufacturing	33599	106	106	108	109
<b>Transportation equipment manufacturing</b>	<b>336</b>				
Motor vehicle manufacturing	3361	1,237	1,327	1,471	1,505
Motor vehicle parts manufacturing	3363	1,915	1,908	1,949	1,995
Aerospace product and parts manufacturing	3364	7,794	7,999	8,121	8,110
Railroad rolling stock manufacturing	3365	1,204	1,095	1,142	1,196
Ship and boat building	3366	112	112	118	125
<b>Furniture and related product manufacturing</b>	<b>337</b>				
Household and institutional furniture and kitchen cabinet manufacturing	3371	824	837	842	840
Office furniture (including fixtures) manufacturing	3372	465	441	428	426
<b>Miscellaneous manufacturing</b>	<b>339</b>				
Medical equipment and supplies manufacturing	3391	177	175	171	171
Other miscellaneous manufacturing	3399	820	824	846	883

Table 8b

## Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Average per month	
		July 2002	June 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
<b>Food manufacturing</b>	<b>311</b>						
Animal food manufacturing	3111	260	260	4.3	273	7.2	263
Starch and vegetable fat and oil manufacturing	31122	183	171	10.3	199	6.5	189
Sugar and confectionery product manufacturing	3113	358	369	1.3	360	-1.3	359
Fruit and vegetable preserving and specialty food manufacturing	3114	792	803	5.4	859	7.6	868
Dairy product manufacturing	3115	733	773	5.7	793	5.3	748
Meat product manufacturing	3116	846	866	-9.9	820	-1.6	884
Cookie, cracker and pasta manufacturing	31182	102	109	13.4	126	-1.9	115
Other food manufacturing	3119	514	499	-0.5	477	4.4	482
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>						
Soft drink and ice manufacturing	31211	282	277	2.5	256	13.8	253
Breweries	31212	174	173	4.5	172	10.2	168
Wineries	31213	202	205	7.1	220	12.6	209
Distilleries	31214	484	490	11.9	522	12.1	484
Tobacco manufacturing	3122	560	619	-5.0	603	-6.2	602
<b>Textile mills</b>	<b>313</b>						
Fibre, yarn and thread mills	3131	55	52	-10.6	54	-22.3	58
Fabric mills	3132	359	365	-13.1	336	-7.1	368
Textile and fabric finishing and fabric coating	3133	56	57	17.5	68	-7.4	60
<b>Textile product mills</b>	<b>314</b>						
Carpet and rug mills	31411	82	85	4.6	85	-21.6	81
Textile bag and canvas mills	31491	77	76	-29.5	49	5.1	67
<b>Clothing manufacturing</b>	<b>315</b>						
Hosiery and sock mills	31511	132	137	8.9	146	-0.7	136
Other clothing knitting mills	31519	118	119	15.2	120	0.2	103
Men's and boys' cut and sew clothing manufacturing	31522	364	403	12.2	411	-19.9	369
Women's and girls' cut and sew clothing manufacturing	31523	382	369	-2.9	342	-7.8	351
Clothing accessories and other clothing manufacturing	3159	68	63	11.7	71	-14.6	64
<b>Leather and allied product manufacturing</b>	<b>316</b>						
Footwear manufacturing	3162	115	111	-3.1	91	-10.9	92
<b>Wood product manufacturing</b>	<b>321</b>						
Sawmills and wood preservation	3211	2,686	2,738	-0.2	3,169	-9.8	2,996
Veneer, plywood and engineered wood product manufacturing	3212	610	621	10.1	731	-4.4	652
Other wood product manufacturing	3219	789	797	12.2	881	7.2	801
<b>Paper manufacturing</b>	<b>322</b>						
Pulp, paper and paperboard mills	3221	2,508	2,487	-2.4	2,520	-8.5	2,549
Paperboard container manufacturing	32221	525	511	5.2	549	-5.0	514
Paper bag and coated and treated paper manufacturing	32222	251	246	9.5	276	2.2	254
Other converted paper product manufacturing	32229	153	151	4.4	153	-3.8	147
<b>Printing and related support activities</b>	<b>323</b>						
Printing	32311	671	665	-0.9	684	-4.4	688
Support activities for printing	32312	14	15	-36.6	9	-42.6	14
<b>Petroleum and coal products manufacturing</b>	<b>324</b>						
Petroleum refineries	32411	1,337	1,248	2.5	1,379	-12.4	1,322
<b>Chemical manufacturing</b>	<b>325</b>						
Other basic inorganic chemical manufacturing	32518	170	175	-2.9	186	-4.3	184
Other basic organic chemical manufacturing	32519	138	126	12.2	161	-23.8	146
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	496	470	10.7	579	-18.9	525
Pesticide and other agricultural chemical manufacturing	32532	109	102	-19.3	120	-20.3	133
Pharmaceutical and medicine manufacturing	3254	2,650	2,646	23.4	3,144	32.8	2,665
Paint and coating manufacturing	32551	246	247	2.8	261	-9.1	249
Adhesive manufacturing	32552	80	80	7.5	88	15.5	81
Soap and cleaning compound manufacturing	32561	149	137	-25.8	107	-11.8	129
Toilet preparation manufacturing	32562	160	144	25.1	189	-6.8	162
Printing ink manufacturing	32591	49	50	1.4	51	-4.2	50
All other chemical product manufacturing	32599	308	319	3.3	315	-0.9	312

Table 8b

## Inventory owned for selected industries, unadjusted - concluded

	NAICS Code	Previous year		Year-to-date		Average per month	
		July 2002	June 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
<b>Plastics and rubber products manufacturing</b>	<b>326</b>						
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	215	209	3.1	228	-6.3	223
Polystyrene foam product manufacturing	32614	30	32	22.9	38	1.6	31
Other plastic product manufacturing	32619	841	851	9.9	914	7.8	848
Other rubber product manufacturing	32629	191	179	-1.1	188	-7.2	189
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>						
Clay product and refractory manufacturing	3271	88	88	0.0	89	-12.2	89
Glass and glass product manufacturing	3272	271	266	-0.5	276	2.8	272
Cement manufacturing	32731	184	198	-4.9	194	-1.9	187
Ready-mix concrete manufacturing	32732	106	103	-6.1	98	-8.6	102
Other concrete product manufacturing	32739	86	82	7.4	91	1.3	82
Abrasive product manufacturing	32791	166	167	-14.0	130	32.0	151
All other non-metallic mineral product manufacturing	32799	153	141	5.1	146	0.9	141
<b>Primary metal manufacturing</b>	<b>331</b>						
Iron and steel mills and ferro-alloy manufacturing	3311	1,963	1,953	9.1	2,101	-1.1	2,050
Iron and steel pipes and tubes manufacturing from purchased steel	33121	501	526	19.1	605	6.7	543
Foundries	3315	273	279	2.9	296	1.0	287
<b>Fabricated metal product manufacturing</b>	<b>332</b>						
Cutlery and hand tool manufacturing	3322	81	84	2.5	83	9.3	83
Plate work and fabricated structural product manufacturing	33231	467	456	4.4	469	2.9	448
Power boiler and heat exchanger manufacturing	33241	152	154	23.1	176	27.1	148
Spring and wire product manufacturing	3326	155	152	2.8	156	-7.4	154
Coating, engraving, heat treating and allied activities	3328	161	148	7.0	161	16.4	156
Other fabricated metal product manufacturing	3329	552	562	2.1	563	3.6	548
<b>Machinery manufacturing</b>	<b>333</b>						
Agricultural implement manufacturing	33311	482	491	5.2	531	1.5	510
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	353	349	-0.2	350	6.8	345
All other general-purpose machinery manufacturing	33399	380	330	13.0	385	12.2	363
<b>Computer and electronic product manufacturing</b>	<b>334</b>						
Computer and peripheral equipment manufacturing	3341	590	612	-6.6	578	-42.7	607
Communications equipment manufacturing	3342	2,328	2,304	-16.3	2,150	-19.6	2,447
Audio and video equipment manufacturing	3343	51	53	15.8	55	-10.6	51
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>						
Lighting fixture manufacturing	33512	160	160	-14.8	140	-2.7	160
Small electrical appliance manufacturing	33521	48	44	17.9	48	-19.2	43
Major appliance manufacturing	33522	157	156	10.9	178	10.6	160
Battery manufacturing	33591	72	73	-12.2	64	44.2	70
Communication and energy wire and cable manufacturing	33592	284	299	-6.4	279	-42.2	291
All other electrical equipment and component manufacturing	33599	109	104	-5.7	107	-24.2	111
<b>Transportation equipment manufacturing</b>	<b>336</b>						
Motor vehicle manufacturing	3361	1,733	1,594	-12.7	1,495	2.9	1,730
Motor vehicle parts manufacturing	3363	1,795	1,762	12.1	1,941	3.9	1,762
Aerospace product and parts manufacturing	3364	7,532	7,938	2.3	7,847	0.3	7,817
Railroad rolling stock manufacturing	3365	1,324	1,291	-6.2	1,205	-14.0	1,338
Ship and boat building	3366	109	115	-21.0	124	-35.7	145
<b>Furniture and related product manufacturing</b>	<b>337</b>						
Household and institutional furniture and kitchen cabinet manufacturing	3371	791	769	12.1	836	9.7	772
Office furniture (including fixtures) manufacturing	3372	389	377	10.2	432	-11.1	398
<b>Miscellaneous manufacturing</b>	<b>339</b>						
Medical equipment and supplies manufacturing	3391	182	186	-5.3	172	-5.8	180
Other miscellaneous manufacturing	3399	902	893	2.3	872	5.4	879

**Table 9**  
**Inventories owned by stage of fabrication**

Period covered	Unadjusted			
	Raw materials	Goods in process	Finished products	Total inventories
July 2002	26,991	15,554	18,660	61,205
August 2002	27,198	16,209	18,823	62,231
September 2002	27,108	15,941	19,144	62,193
October 2002	27,379	15,975	18,942	62,295
November 2002	27,237	16,282	19,610	63,129
December 2002	27,600	15,742	19,047	62,389
January 2003	27,863	15,527	19,210	62,601
February 2003	28,300	15,874	19,806	63,980
March 2003	28,431	15,820	20,261	64,512
April 2003	27,952	16,165	20,478	64,595
May 2003	27,124	16,183	20,397	63,705
June 2003	26,632	15,785	19,999	62,417
July 2003	26,644	15,597	19,496	61,737
Period covered	Seasonally adjusted			
	Raw materials	Goods in process	Finished products	Total inventories
July 2002	27,334	15,814	18,811	61,958
August 2002	27,420	16,152	18,835	62,407
September 2002	27,319	15,812	19,189	62,320
October 2002	27,450	15,913	19,217	62,580
November 2002	27,331	16,014	19,643	62,989
December 2002	27,591	15,943	19,626	63,161
January 2003	27,471	15,952	19,506	62,929
February 2003	27,661	15,917	19,730	63,307
March 2003	27,779	15,774	19,815	63,368
April 2003	27,726	16,150	20,023	63,898
May 2003	27,455	15,959	20,043	63,457
June 2003	27,199	15,748	19,909	62,855
July 2003	27,070	15,903	19,717	62,690

**Table 10**  
**Shipments by major group and province, unadjusted**

Province	Current year			
	July 2003	June 2003	May 2003	April 2003
	\$ millions			
<b>Total</b>				
Newfoundland and Labrador	273	264	207	157
Prince Edward Island	126	149	133	89
Nova Scotia	744	725	747	687
New Brunswick	1,081	1,187	1,094	1,052
Quebec	9,340	9,995	10,171	10,043
Ontario	19,849	23,486	24,164	23,574
Manitoba	945	968	1,017	996
Saskatchewan	591	649	667	646
Alberta	3,556	3,522	3,651	3,408
British Columbia	2,879	2,856	2,847	2,824
<b>311 Food manufacturing</b>				
Newfoundland and Labrador	121	117	78	37
Prince Edward Island	90	106	93	57
Nova Scotia	191	174	175	162
New Brunswick	169	280	175	103
Quebec	1,151	1,211	1,225	1,129
Ontario	2,101	2,114	2,216	2,152
Manitoba	247	250	257	249
Saskatchewan	155	155	164	170
Alberta	706	640	775	787
British Columbia	406	397	385	367
<b>312 Beverage and tobacco product manufacturing</b>				
Nova Scotia	29	23	21	19
Quebec	405	423	383	321
Ontario	620	587	571	531
Saskatchewan	7	6	6	5
British Columbia	101	98	95	84
<b>313 Textile mills</b>				
Quebec	122	169	173	168
Ontario	59	68	72	71
<b>314 Textile product mills</b>				
Quebec	76	83	83	80
Ontario	82	91	102	88
Alberta	3	3	3	3
British Columbia	10	9	9	8
<b>315 Clothing manufacturing</b>				
Quebec	293	262	279	318
Ontario	136	115	142	135
Manitoba	30	21	26	25
Saskatchewan	2	1	2	2
Alberta	7	6	7	7
British Columbia	25	23	17	20
<b>316 Leather and allied product manufacturing</b>				
Quebec	24	23	26	22
Ontario	15	12	13	12
<b>321 Wood product manufacturing</b>				
Nova Scotia	50	46	48	41
Quebec	541	656	685	669
Ontario	497	463	480	458
Manitoba	50	47	44	41
Saskatchewan	45	42	43	38
Alberta	219	200	184	178
British Columbia	773	790	773	779

**Table 10**  
**Shipments by major group and province, unadjusted - continued**

Province	Current year			
	July 2003	June 2003	May 2003	April 2003
	\$ millions			
<b>322 Paper manufacturing</b>				
Nova Scotia	79	75	79	81
Quebec	905	881	937	934
Ontario	785	786	813	820
Alberta	131	126	127	129
British Columbia	415	408	433	443
<b>323 Printing and related support activities</b>				
Quebec	219	209	240	245
Ontario	402	434	444	453
Manitoba	34	37	40	36
Saskatchewan	10	8	9	8
Alberta	41	44	48	47
British Columbia	42	42	42	43
<b>324 Petroleum and coal products manufacturing</b>				
Quebec	648	548	555	583
Ontario	880	811	842	836
Alberta	714	681	689	603
British Columbia	69	64	63	63
<b>325 Chemical manufacturing</b>				
Quebec	727	770	849	754
Ontario	1,734	1,826	1,814	1,816
Manitoba	49	59	94	67
Saskatchewan	25	87	111	81
Alberta	532	572	742	573
British Columbia	97	108	117	117
<b>326 Plastics and rubber products manufacturing</b>				
Nova Scotia	89	88	92	88
Quebec	425	467	483	492
Ontario	1,075	1,187	1,238	1,228
Manitoba	44	43	49	45
Saskatchewan	10	10	10	10
Alberta	99	97	86	81
British Columbia	120	107	104	95
<b>327 Non-metallic mineral product manufacturing</b>				
Nova Scotia	19	17	17	10
Quebec	262	289	296	215
Ontario	532	525	504	450
Saskatchewan	15	13	12	6
Alberta	158	133	115	104
British Columbia	131	129	129	123
<b>331 Primary metal manufacturing</b>				
Quebec	1,021	1,015	1,046	1,101
Ontario	1,180	1,289	1,424	1,435
Alberta	79	75	65	73
<b>332 Fabricated metal product manufacturing</b>				
Newfoundland and Labrador	15	14	14	11
Prince Edward Island	2	2	1	3
Nova Scotia	31	28	21	19
New Brunswick	25	24	20	17
Quebec	407	454	453	417
Ontario	1,267	1,337	1,374	1,341
Manitoba	67	73	64	66
Saskatchewan	40	39	40	37
Alberta	287	320	249	246
British Columbia	140	140	135	134



**Table 10**  
**Shipments by major group and province, unadjusted - continued**

Province	Current year			
	July 2003	June 2003	May 2003	April 2003
	\$ millions			
<b>333 Machinery manufacturing</b>				
Quebec	317	361	361	341
Ontario	998	977	1,088	993
Manitoba	92	83	83	82
Saskatchewan	42	40	48	66
Alberta	237	240	221	232
British Columbia	137	139	143	135
<b>334 Computer and electronic product manufacturing</b>				
Quebec	341	520	415	377
Ontario	774	947	848	778
Saskatchewan	8	10	7	8
Alberta	73	98	63	74
British Columbia	76	65	68	72
<b>335 Electrical equipment, appliance and component manufacturing</b>				
Quebec	233	261	244	230
Ontario	369	437	424	408
Manitoba	10	11	12	14
Saskatchewan	12	13	12	12
Alberta	41	39	33	33
British Columbia	28	27	35	28
<b>336 Transportation equipment manufacturing</b>				
Nova Scotia	41	56	64	58
Quebec	870	1,001	1,017	1,254
Ontario	5,552	8,667	8,979	8,777
Manitoba	117	133	142	165
Saskatchewan	24	23	31	29
Alberta	65	78	71	82
British Columbia	89	104	101	102
<b>337 Furniture and related product manufacturing</b>				
Quebec	232	265	294	283
Ontario	588	596	561	561
Manitoba	60	61	59	60
Saskatchewan	8	7	7	6
Alberta	60	66	68	67
British Columbia	47	45	45	46
<b>339 Miscellaneous manufacturing</b>				
Newfoundland and Labrador	2	1	1	1
Quebec	121	125	126	110
Ontario	201	218	216	231
Manitoba	10	7	7	7
Saskatchewan	4	4	4	5
Alberta	31	33	34	30
British Columbia	59	50	46	47

Table 10

## Shipments by major group and province, unadjusted - continued

	Previous year		Year-to-date		Annual	
	July 2002	June 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
<b>Total</b>						
Newfoundland and Labrador	251	269	3.5	1,331	1.3	2,234
Prince Edward Island	117	148	2.3	746	9.5	1,316
Nova Scotia	733	755	6.1	5,047	1.3	8,646
New Brunswick	1,129	1,178	6.3	7,529	3.1	12,632
Quebec	9,474	10,340	-1.3	68,526	0.9	122,059
Ontario	20,146	23,829	0.5	160,735	3.4	277,581
Manitoba	940	965	1.3	6,746	0.6	11,538
Saskatchewan	594	612	2.8	4,372	1.3	7,239
Alberta	3,450	3,445	8.8	24,877	-3.4	40,966
British Columbia	3,046	2,962	-2.8	19,410	0.4	34,236
<b>311 Food manufacturing</b>						
Newfoundland and Labrador	134	150	-14.8	463	10.3	891
Prince Edward Island	83	105	1.5	526	8.0	952
Nova Scotia	194	174	1.6	1,212	2.2	2,234
New Brunswick	209	237	-10.2	1,040	4.6	2,004
Quebec	1,108	1,118	4.4	7,983	1.4	13,573
Ontario	2,081	2,090	1.9	14,541	-0.1	25,085
Manitoba	252	253	0.3	1,734	4.3	3,023
Saskatchewan	151	139	7.1	1,086	3.3	1,825
Alberta	796	774	-0.9	5,181	-1.0	9,055
British Columbia	383	386	5.2	2,544	3.4	4,270
<b>312 Beverage and tobacco product manufacturing</b>						
Nova Scotia	26	20	15.3	138	1.5	213
Quebec	385	405	1.8	2,377	5.7	4,093
Ontario	600	607	1.7	3,745	2.6	6,514
Saskatchewan	13	11	-44.5	35	-7.8	92
British Columbia	107	98	6.3	580	9.1	990
<b>313 Textile mills</b>						
Quebec	132	184	-9.7	1,095	-2.6	2,069
Ontario	70	78	-13.9	477	-5.3	912
<b>314 Textile product mills</b>						
Quebec	79	85	-6.7	546	-2.1	1,020
Ontario	91	100	-7.8	621	3.8	1,138
Alberta	2	2	7.1	17	-14.4	28
British Columbia	14	12	-31.5	60	4.0	153
<b>315 Clothing manufacturing</b>						
Quebec	301	288	-5.3	2,092	-7.4	3,937
Ontario	164	139	-14.7	964	6.6	2,020
Manitoba	35	28	0.2	177	13.1	376
Saskatchewan	2	1	17.3	12	-5.6	22
Alberta	8	6	-7.9	47	-6.8	89
British Columbia	25	20	3.6	153	-15.8	263
<b>316 Leather and allied product manufacturing</b>						
Quebec	28	28	-10.1	166	-18.8	430
Ontario	15	13	-23.8	91	11.9	225
<b>321 Wood product manufacturing</b>						
Nova Scotia	43	49	-2.7	301	10.1	530
Quebec	523	674	-0.6	4,407	11.9	7,637
Ontario	484	474	-4.0	3,179	7.7	5,622
Manitoba	45	44	0.2	287	-13.5	501
Saskatchewan	34	30	24.9	283	39.0	430
Alberta	197	201	-4.4	1,295	2.8	2,265
British Columbia	919	886	-17.6	5,458	4.8	10,830

Table 10

## Shipments by major group and province, unadjusted - continued

	Previous year		Year-to-date		Annual	
	July 2002	June 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
<b>322 Paper manufacturing</b>						
Nova Scotia	79	64	11.3	529	-17.9	881
Quebec	961	933	-2.9	6,454	-2.7	11,729
Ontario	858	833	-3.1	5,691	-3.6	10,091
Alberta	131	135	3.5	894	4.0	1,553
British Columbia	411	424	8.9	2,952	-11.7	4,790
<b>323 Printing and related support activities</b>						
Quebec	213	222	1.4	1,602	-11.3	2,749
Ontario	415	430	-1.4	3,037	2.0	5,351
Manitoba	34	35	-3.7	241	-6.4	436
Saskatchewan	9	8	10.3	63	6.1	106
Alberta	44	45	-3.3	317	-5.4	574
British Columbia	54	48	-16.9	300	-10.7	608
<b>324 Petroleum and coal products manufacturing</b>						
Quebec	593	522	29.8	4,558	6.7	6,845
Ontario	845	757	21.1	6,292	-2.9	9,861
Alberta	660	594	29.1	4,988	1.0	7,491
British Columbia	71	67	0.3	449	-4.8	754
<b>325 Chemical manufacturing</b>						
Quebec	738	727	2.4	5,156	6.8	8,711
Ontario	1,685	1,697	9.0	12,566	7.8	20,076
Manitoba	38	52	26.5	442	-12.6	616
Saskatchewan	21	68	16.2	487	-10.8	562
Alberta	456	503	19.8	4,253	-6.7	6,456
British Columbia	96	97	20.7	733	7.1	1,076
<b>326 Plastics and rubber products manufacturing</b>						
Nova Scotia	92	95	-7.0	614	6.9	1,141
Quebec	396	454	6.3	3,168	10.7	5,208
Ontario	1,119	1,244	0.2	8,141	6.9	13,805
Manitoba	42	47	1.2	304	7.5	508
Saskatchewan	7	8	16.2	65	5.4	98
Alberta	92	97	2.2	591	-4.0	1,023
British Columbia	99	98	10.8	659	-3.1	1,008
<b>327 Non-metallic mineral product manufacturing</b>						
Nova Scotia	19	16	-1.4	86	1.2	162
Quebec	247	267	5.2	1,522	10.8	2,701
Ontario	474	469	7.8	3,056	4.9	5,264
Saskatchewan	16	14	-10.7	57	-8.2	113
Alberta	164	146	1.2	810	24.1	1,510
British Columbia	137	122	9.5	826	17.0	1,357
<b>331 Primary metal manufacturing</b>						
Quebec	1,036	1,034	-0.6	7,401	7.8	12,712
Ontario	1,242	1,348	5.7	9,718	11.9	16,003
Alberta	76	73	18.9	596	-10.7	896
<b>332 Fabricated metal product manufacturing</b>						
Newfoundland and Labrador	8	10	78.0	81	-15.5	88
Prince Edward Island	3	2	4.9	14	-1.5	25
Nova Scotia	20	20	13.9	155	17.2	264
New Brunswick	23	23	-6.8	142	-5.7	268
Quebec	395	478	-2.3	2,902	1.8	5,329
Ontario	1,269	1,343	-2.8	9,130	4.7	16,165
Manitoba	62	61	22.5	476	-2.0	707
Saskatchewan	42	43	5.9	255	-6.5	416
Alberta	209	202	27.3	1,831	-2.7	2,637
British Columbia	153	143	-0.5	931	2.2	1,609

**Table 10**  
**Shipments by major group and province, unadjusted - concluded**

	Previous year		Year-to-date		Annual	
	July 2002	June 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
<b>333 Machinery manufacturing</b>						
Quebec	319	400	-5.2	2,485	0.2	4,587
Ontario	970	1,109	-6.8	7,013	4.1	12,943
Manitoba	81	93	-10.5	585	9.4	1,042
Saskatchewan	44	44	-12.2	360	7.4	662
Alberta	228	228	-3.3	1,646	-14.5	2,872
British Columbia	123	144	13.8	968	8.7	1,594
<b>334 Computer and electronic product manufacturing</b>						
Quebec	493	588	-20.5	3,022	-18.1	6,588
Ontario	949	1,114	-16.4	5,946	-13.9	11,900
Saskatchewan	7	7	6.4	57	12.7	94
Alberta	120	158	-28.7	559	-29.9	1,392
British Columbia	78	69	-1.6	460	-17.7	879
<b>335 Electrical equipment, appliance and component manufacturing</b>						
Quebec	230	251	-0.5	1,687	10.6	2,930
Ontario	405	447	-6.9	2,873	-12.2	5,210
Manitoba	10	18	-22.9	84	-14.7	183
Saskatchewan	19	17	-42.4	82	-45.0	208
Alberta	27	27	28.2	231	9.5	328
British Columbia	26	25	6.6	210	-32.9	345
<b>336 Transportation equipment manufacturing</b>						
Nova Scotia	61	132	-32.8	387	29.7	862
Quebec	919	1,227	-12.9	7,195	-7.0	14,134
Ontario	5,670	8,812	0.1	58,192	6.5	100,483
Manitoba	119	126	3.2	988	0.2	1,603
Saskatchewan	31	34	-11.6	189	21.7	349
Alberta	56	78	9.5	515	0.5	785
British Columbia	139	122	-19.5	672	-4.9	1,283
<b>337 Furniture and related product manufacturing</b>						
Quebec	242	293	-2.5	1,862	11.4	3,293
Ontario	542	538	5.3	3,992	-2.2	6,629
Manitoba	63	54	-1.6	419	11.3	743
Saskatchewan	9	10	-13.8	48	3.3	89
Alberta	69	66	-5.0	454	-3.9	838
British Columbia	48	40	8.8	316	14.4	525
<b>339 Miscellaneous manufacturing</b>						
Newfoundland and Labrador	2	2	-38.5	7	22.1	18
Quebec	135	163	-11.0	845	11.3	1,785
Ontario	199	188	8.9	1,469	6.8	2,284
Manitoba	12	8	-14.7	54	-11.0	107
Saskatchewan	4	4	10.0	28	-2.0	44
Alberta	37	37	-7.3	223	7.8	440
British Columbia	53	47	3.1	341	15.0	606

## Survey documentation

- About the Monthly Survey of Manufacturing
- Concepts and definitions
- Survey Design and Methodology
- Data Quality

### About the Monthly Survey of Manufacturing

The statistics contained in this publication are based on information obtained through a sample survey of 11,000 representative manufacturing establishments across Canada. The Monthly Survey of Manufacturers started in 1947 and although its content has remained essentially the same, it underwent a major redesign with respect to the frame in 1999.

The values (in Canadian dollars) of shipments, inventories and orders are used as indicators of the economic condition of manufacturing industries; as inputs to Canada's Gross Domestic Product; as two components in the Statistics Canada composite indicator; as input to macro- and micro-economic studies and in econometric models (e.g. to determine market share, apparent domestic availability, etc.).

Since 1999, Statistics Canada's Business Register provides the sampling frame for the Monthly Survey of Manufacturing (MSM). The target population for the MSM consists of all statistical establishments on the business register that are classified to the manufacturing sector. The sampling frame for the MSM is determined from the target population after subtracting establishments that represent the bottom 2% of the total manufacturing shipments estimate for each province. These establishments are excluded from the frame so that the sample size can be reduced without significantly affecting quality.

### Concepts and Definitions

The Monthly Survey of Manufacturing (MSM) publishes statistical series for manufacturers – shipments, inventories, unfilled orders and new orders. The values of these characteristics represent current monthly estimates of the more complete Annual Survey of Manufactures (ASM) data.

The MSM is a sample survey of approximately 11,000 Canadian manufacturing establishments, which are categorized into over 200 industries. Industries are classified according to the 1997 North American Industrial Classification System (NAICS), which replaced the 1980 Standard Industrial Classification (SIC) system. Reference year 2000 is the last year for which data are released on a SIC basis. The MSM adopted the NAICS for its 2001 reference, while previous years' data have been re-calculated to the new classification system back to 1992. Seasonally adjusted series are available for the main aggregates.

An establishment comprises the smallest manufacturing unit capable of reporting the variables of interest. Data collected by the MSM provides a current 'snapshot' of shipment values by the Canadian manufacturing sector, enabling analysis of the state of the Canadian economy, as well as the health of specific industries in the short- to medium-term. The information is used by both private and public sectors including Statistics Canada, federal and provincial governments, business and trade entities, international and domestic non-governmental organizations, consultants, the business press and private citizens. The data are used for analyzing market share, trends, corporate benchmarking, policy analysis, program development, tax policy and trade policy.

#### 1. Shipments

Shipments are defined as the value of goods manufactured by establishments that have been shipped to a customer. Shipments exclude any wholesaling activity, and any revenues from the rental of equipment or the sale of electricity. Note that in practice, some respondents report financial transactions rather than payments for work done. Shipments are available by 3-digit NAICS, broken down by province.

For the aerospace product and parts, and shipbuilding industries, the value of production is used instead of shipments. This value is calculated by adjusting monthly shipments by the monthly change in goods in process and finished product inventories. Raw materials are not included in the calculation since production tries to measure "work done" during the month. This is done in order to reduce distortions caused by the shipment of high value items as completed sales.

#### 2. Inventories

Measurement of component values of inventory is important for economic studies as well as for derivation of production values. Respondents are asked to report their book values (at cost), of raw materials, any goods in process, and finished product inventories separately. In some cases, respondents estimate a total inventory figure, which is allocated on the basis of proportions reported on the ASM. Inventory levels are calculated on a Canadawide basis, not by province.

#### 3. Orders

##### a) Unfilled Orders

Unfilled orders represent a backlog or stock of orders that will generate future shipments assuming that they are not cancelled. As with inventories, unfilled orders and new orders levels are calculated on a Canadawide basis, not by province.

The MSM produces estimates for unfilled orders for all industries except for those industries where orders are customarily filled from stocks on hand and order books are not generally maintained. In the case of the aircraft companies, options to purchase are not treated as orders until they are entered into the accounting system.

#### *b) New Orders*

New orders represent current demand for manufactured products. Estimates of new orders are derived from shipments and unfilled orders data. All shipments within a month result from either an order received during the month or at some earlier time. New orders can be calculated as the sum of shipments adjusted for the monthly change in unfilled orders.

### **4. Non-Durable / Durable goods**

#### *a) Non-durable goods industries*

Non-durable goods industries include Food (NAICS 311), Beverage and Tobacco Products (312), Textile Mills (313), Textile Product Mills (314), Leather and Allied Products (316), Paper (322), Printing and Related Support Activities (323), Petroleum and Coal Products (324), Chemicals (325) and Plastic and Rubber Products (326)

#### *b) Durable goods industries*

Durable goods industries include Clothing (NAICS 315), Wood Products (321), Non-Metallic Mineral Products (327), Primary Metals (331), Fabricated Metal Products (332), Machinery (333), Computer and Electronic Products (334), Electrical Equipment, Appliance and Components (335), Transportation Equipment (336), Furniture and Related Products (337) and Miscellaneous Manufacturing (339).

## **Survey Design and Methodology**

Beginning with the August 1999 reference month, the Monthly Survey of Manufacturing (MSM) has undergone an extensive redesign.

### *Concept Review*

It was decided that before any redesign work could begin the basic concepts and definitions of the program would be confirmed.

This was done in two ways: First, a review of user requirements was initiated. This involved revisiting an internal report to ensure that the user requirements from that exercise were being satisfied. As well, another round of internal review with the major users in the National Accounts was undertaken. This was to specifically focus on any data gaps that could be identified.

Secondly, with these gaps or requirements in hand, a survey was conducted in order to ascertain respondent's ability to report existing and new data. The study was also to confirm that respondents understood the definitions, which were being asked by survey analysts.

The result of the concept review was a reduction of the number of questions for the survey from sixteen to seven. Most of the questions that were dropped had to do with the reporting of shipments for work that was partially completed.

### *Methodology*

The new sample design incorporates the 1997 North American Industrial Classification Standard (NAICS) and gives a much higher profile to provincial estimates. Stratification is done by province with equal quality requirements for each province. Large size units are selected with certainty and small units are selected with a probability based on the desired quality of the estimate within a cell.

The opportunity was also taken at this time to allow for the introduction of sample rotation into the survey design. Most of the smaller companies who are asked to participate in the survey will do so only for a set period.

The estimation system generates estimates using the NAICS. The estimates will also continue to be reconciled to the ASM. Provincial estimates for all variables will be produced. A measure of quality (CV) will also be produced.

## **Components of the Redesigned Survey**

### **Target Population and Sampling Frame**

Statistics Canada's business register provides the sampling frame for the MSM. The target population for the MSM consists of all statistical establishments on the business register that are classified to the manufacturing sector (by NAICS). The sampling frame for the MSM is determined from the target population after subtracting establishments that represent the bottom 2% of the total manufacturing shipments estimate for each province. These establishments were excluded from the frame so that the sample size could be reduced without significantly affecting quality.

### **The Sample**

The MSM sample is a probability sample comprised of approximately 11,000 establishments.

Prior to selection, the sampling frame is subdivided into industry-province cells. For the most part, NAICS codes were used. Depending upon the number of establishments within each cell, further subdivisions were made to group similar sized establishments' together (called stratum). An establishment's size was based on its most recently available annual shipments or sales value.

Each industry by province cell has a 'take-all' stratum composed of establishments sampled each month with certainty. This 'take-all' stratum is composed of establishments that are the largest statistical enterprises, and have the largest impact on estimates within a particular industry by province cell. These large statistical enterprises comprise 45% of the national manufacturing shipment estimates.

Each industry - province cell can have at most three 'take-some' strata. Not all establishments within these strata need to be sampled with certainty. A random sample is drawn from the remaining strata. The responses from these sampled establishments are weighted according to the inverse of their probability of selection.



The initial sample was selected in late 1998 and has been refreshed each month by including a sample of new entrants in the frame.

### Data Collection

Data collection, data capture, preliminary edit and follow-up of non-respondents are all performed in Statistics Canada regional offices. Sampled establishments are contacted by mail or telephone according to the preference of the respondent. Data capture and preliminary editing are performed simultaneously to ensure the validity of the data.

In some cases, combined reports are received from enterprises or companies with more than one establishment in the sample where respondents prefer not to provide individual establishment reports. Businesses, which do not report or whose reports contain errors, are followed up immediately.

## Data Quality

### Statistical Edit and Imputation

Data are analyzed within each industry-province cell. Extreme values are listed for inspection by the magnitude of the deviation from average behavior. Respondents are contacted to verify extreme values. Records that fail statistical edits are considered outliers and are not used for imputation.

Values are imputed for the non-responses, for establishments that do not report or only partially complete the survey form. A number of imputation methods are used depending on the variable requiring treatment. Methods include using industry-province cell trends, historical responses, or reference to the ASM. Following imputation, the MSM staff performs a final verification of the responses that have been imputed.

### Revisions

In conjunction with preliminary estimates for the current month, estimates for the previous three months are revised to account for any late returns. Data are revised when late responses are received or if an incorrect response was reported earlier.

### Estimation

Estimates are calculated by multiplying an estimation weight to an establishment's reported responses. The estimation weight is the inverse of the sampled establishment's probability of selection. Take all units are self-representative.

### Benchmarking

The MSM is periodically benchmarked to the most recent results of the Annual Survey of Manufactures (approximately eighteen months after the end of the reference year). Benchmarking is a process designed to calibrate the monthly estimates to the level of the more complete Annual Survey of Manufacturers. The result is that the two surveys have consistent totals at the aggregated level. The MSM estimates were benchmarked to the 1998 ASM with the release of the January 2001 reference month.

## Sampling and Non-sampling Errors

The statistics in this publication are estimates derived from a sample survey and, as such, can be subject to errors. The following material is provided to assist the reader in the interpretation of the estimates published.

Estimates derived from a sample survey are subject to a number of different kinds of errors. These errors can be broken down into two major types: sampling and non-sampling.

### 1. Sampling Errors

Sampling errors are an inherent risk of sample surveys. They result from the difference between the value of a variable if it is randomly sampled and its value if a census is taken (or the average of all possible random values). These errors are present because observations are made only on a sample and not on the entire population.

The sampling error depends on factors such as the size of the sample, variability in the population, sampling design and method of estimation. For example, for a given sample size, the sampling error will depend on the stratification procedure employed, allocation of the sample, choice of the sampling units and method of selection. (Further, even for the same sampling design, we can make different calculations to arrive at the most efficient estimation procedure.) The most important feature of probability sampling is that the sampling error can be measured from the sample itself.

### 2. Non-sampling Errors

Non-sampling errors result from a systematic flaw in the structure of the data-collection procedure or design of any or all variables examined. They create a difference between the value of a variable obtained by sampling or census methods and the variable's true value. These errors are present whether a sample or a complete census of the population is taken. Non-sampling errors can be attributed to one or more of the following sources:

**a) Coverage error:** This error can result from incomplete listing and inadequate coverage of the population of interest.

**b) Data response error:** This error may be due to questionnaire design, the characteristics of a question, inability or unwillingness of the respondent to provide correct information, misinterpretation of the questions or definitional problems.

**c) Non-response error:** Some respondents may refuse to answer questions, some may be unable to respond, and others may be too late in responding. Data for the non-responding units can be imputed using the data from responding units or some earlier data on the non-responding units if available.

The extent of error due to imputation is usually unknown and is very much dependent on any characteristic differences between the respondent group and the non-respondent group in the survey. This error generally decreases with increases in the response rate and attempts are therefore made to obtain as high a response rate as possible.

**d) Processing error:** These errors may occur at various stages of processing such as coding, data entry, verification, editing, weighting, and tabulation, etc. Non-sampling errors are difficult to measure. More important, non-sampling errors require control at the level at which their presence does not impair the use and interpretation of the results.

Measures have been undertaken to minimize the non-sampling errors. For example, units have been defined in a most precise manner and the most up-to-date listings have been used. Questionnaires have been carefully designed to minimize different interpretations. As well, detailed acceptance testing has been carried out for the different stages of editing and processing and every possible effort has been made to reduce the non-response rate as well as the response burden.

**Measures of Sampling and Non-sampling Errors**

**1. Sampling Error Measures**

The sample used in this survey is one of a large number of all possible samples of the same size that could have been selected using the same sample design under the same general conditions. If it was possible that each one of these samples could be surveyed under essentially the same conditions, with an estimate calculated from each sample, it would be expected that the sample estimates would differ from each other.

The average estimate derived from all these possible sample estimates is termed the expected value. The expected value can also be expressed as the value that would be obtained if a census enumeration were taken under identical conditions of collection and processing. An estimate calculated from a sample survey is said to be precise if it is near the expected value.

Sample estimates may differ from this expected value of the estimates. However, since the estimate is based on a probability sample, the variability of the sample estimate with respect to its expected value can be measured. The variance of an estimate is a measure of the precision of the sample estimate and is defined as the average, over all possible samples, of the squared difference of the estimate from its expected value.

The standard error is a measure of precision in absolute terms. The coefficient of variation, defined as the standard error divided by the sample estimate, is a measure of precision in relative terms. For comparison purposes, one may more readily compare the sampling error of one estimate to the sampling error of another estimate by using the coefficient of variation.

In this publication, the coefficient of variation is used to measure the sampling error of the estimates. However, since the coefficient of variation published for this survey is calculated from the responses of individual units, it also measures some non-sampling error.

The formula used to calculate the published coefficients of variation (CV) in Table 1 is:

$$CV(X) = \frac{S(X)}{X}$$

where X denotes the estimate and S(X) denotes the standard error of X.

In this publication, the coefficient of variation is expressed as a percentage.

Confidence intervals can be constructed around the estimate using the estimate and the coefficient of variation. Thus, for our sample, it is possible to state with a given level of confidence that the expected value will fall within the confidence interval constructed around the estimate. For example, if an estimate of \$12,000,000 has a coefficient of variation of 10%, the standard error will be \$1,200,000 or the estimate multiplied by the coefficient of variation. It can then be stated with 68% confidence that the expected value will fall within the interval whose length equals the standard deviation about the estimate, i.e., between \$10,800,000 and \$13,200,000. Alternatively, it can be stated with 95% confidence that the expected value will fall within the interval whose length equals two standard deviations about the estimate, i.e., between \$9,600,000 and \$14,400,000.

The table below contains the national level CVs, expressed as a percentage, for all manufacturing for the MSM characteristics. For CVs at other aggregate levels, contact the Marketing and Dissemination Section at (613) 951-9497, toll free: 1-866-873-8789 or by e-mail at *manufact@statcan.ca*.

**National Level CVs by Characteristic**

Month	Shipments	Raw Material Inventories	Goods in Process Inventories	Finished Product Inventories	Unfilled Orders
%					
July 2002	0.54	0.88	0.62	1.34	1.37
August 2002	0.53	0.88	0.65	1.36	1.42
September 2002	0.53	0.90	0.73	1.40	1.52
October 2002	0.53	0.93	0.72	1.33	1.86
November 2002	0.50	0.91	0.72	1.25	1.85
December 2002	0.54	0.92	0.74	1.20	1.82
January 2003	0.52	0.89	0.75	1.25	1.81
February 2003	0.52	0.89	0.73	1.25	1.78
March 2003	0.52	0.92	0.76	1.26	1.75
April 2003	0.54	0.91	0.78	1.28	1.68
May 2003	0.55	0.95	0.73	1.29	1.60
June 2003	0.56	0.95	0.69	1.35	1.54
July 2003	0.59	0.93	0.70	1.44	1.52



## 2. Non-sampling Error Measures

The exact population value is aimed at or desired by both a sample survey as well as a census. We say the estimate is accurate if it is near this value. Although this value is desired, we cannot assume that the exact value of every unit in the population or sample can be obtained and processed without error. Any difference between the expected value and the exact population value is termed the bias. Systematic biases in the data cannot be measured by the probability measures of sampling error as previously described. The accuracy of a survey estimate is determined by the joint effect of sampling and non-sampling errors.

Three sources of non-sampling error in the MSM are non-response error, imputation error and the error due to editing. To assist users in evaluating these errors, weighted rates that are related to these three types of error are given in Table 2. The following is an example of what is meant by a weighted rate. A cell with a sample of 20 units in which five respond for a particular month would have a response rate of 25%. If these five reporting units represented \$8 million out of a total estimate of \$10 million, the weighted response rate would be 80%.

The definitions of the three weighted rates noted in Table 2 follow. The weighted response rate is the proportion of a characteristic's total estimate that is based upon reported data (excluding data that has been edited). The weighted imputation rate is the proportion of a characteristic's total estimate that is based upon imputed data. The weighted editing rate is the proportion of a characteristic's total estimate that is based upon data that was edited (edited data may have been originally reported or imputed).

The table below contains the three types of weighted rates for each of the characteristics at the national level for all of manufacturing. In the table, the rates (expressed as percentages) are averages over the last thirteen months.

### Average National Weighted Rates by Characteristic

Characteristic	Response	Imputation	Editing
		%	
Shipments	92.92	4.12	2.96
Raw Materials	79.07	17.50	3.42
Goods in Process	77.83	10.73	11.45
Finished Products	80.00	14.98	5.02
Unfilled Orders	87.32	6.23	6.45

### Joint Interpretation of Measures of Error

The measure of non-response error as well as the coefficient of variation must be considered jointly to have an overview of the quality of the estimates. The lower the coefficient of variation and the higher the weighted response rate, the better will be the published estimate.

### Seasonal Adjustment

Economic time series contain the elements essential to the description, explanation and forecasting of the behavior of an economic phenomenon. They are statistical records of

the evolution of economic processes through time. In using time series to observe economic activity, economists and statisticians have identified four characteristic behavioral components: the long-term movement or trend, the cycle, the seasonal variations and the irregular fluctuations. These movements are caused by various economic, climatic or institutional factors. The seasonal variations occur periodically on a more or less regular basis over the course of a year. These variations occur as a result of seasonal changes in weather, statutory holidays and other events that occur at fairly regular intervals and thus have a significant impact on the rate of economic activity.

In the interest of accurately interpreting the fundamental evolution of an economic phenomenon and producing forecasts of superior quality, Statistics Canada uses the X11ARIMA/88 seasonal adjustment method to seasonally adjust its time series. This method minimizes the impact of seasonal variations on the series and essentially consists of adding one year of estimated raw data to the end of the original series before it is seasonally adjusted per se. The estimated data are derived from forecasts using ARIMA (Auto Regressive Integrated Moving Average) models of the Box-Jenkins type.

The X-11 part of the X11ARIMA/88 program uses primarily a ratio-to-moving average method. It is used to smooth the modified series and obtain a preliminary estimate of the trend-cycle. It also calculates the ratios of the original series (fitted) to the estimates of the trend-cycle and estimates the seasonal factors from these ratios. The final seasonal factors are produced only after these operations have been repeated several times.

The procedures to determine the seasonal factors necessary to calculate the final seasonally adjusted data are executed every month. This approach ensures that the estimated seasonal factors are derived from an unadjusted series that includes all the available information about the series, i.e. the current month's unadjusted data as well as the previous month's revised unadjusted data.

While seasonal adjustment permits a better understanding of the underlying trend-cycle of a series, the seasonally adjusted series still contains an irregular component. Slight month-to-month variations in the seasonally adjusted series may be simple irregular movements. To get a better idea of the underlying trend, users should examine several months of the seasonally adjusted series.

The Canada seasonally adjusted total is derived indirectly by the summation of the individually seasonally adjusted kinds of business.

### Trend

A seasonally adjusted series may contain the effects of irregular influences and special circumstances and these can mask the trend. The short term trend shows the underlying direction in seasonally adjusted series by averaging across months, thus smoothing out the effects of irregular influences. The result is a more stable series. The trend for the last month may be, subject to significant revision as values in future months are included in the averaging process.



Manufacturing, Construction  
and Energy Division

# Monthly Survey of Manufacturing

Division de la fabrication,  
de la construction et de l'énergie

# Enquête mensuelle sur les industries manufacturières

Confidential when completed

Collected under the authority of the  
*Statistics Act, Revised Statutes of  
Canada, 1985, Chapter S19.*

Confidentiel une fois rempli

Renseignements recueillis en vertu de  
La *Loi sur la statistique*, Lois révisées  
du Canada, 1985, chapitre S19.

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If you need assistance, please call telephone No. below.  
Si vous avez besoin d'aide, veuillez téléphoner au n° suivant.

Telephone/Téléphone:

Toll Free/Numéro sans frais:

Fax/Télécopieur:

Toll Free Fax/Télécopieur sans frais:



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### INFORMATION SHARING AGREEMENTS:

To reduce response burden and to ensure more uniform statistics, Statistics Canada has entered into agreements with government departments and agencies for the sharing of data. See the second page for details of the agreements concerning this survey.

### ENTENTES DE PARTAGE DES DONNÉES :

Pour alléger le fardeau de réponse et assurer des statistiques plus uniformes, Statistique Canada a conclu des ententes avec des ministères et organismes publics en vue d'un échange de données. Voir la deuxième page pour détails sur les accords concernant cette enquête.

Please correct name, address and establishment coverage if necessary – Veuillez corriger le nom, l'adresse et le regroupement d'établissements s'il y a lieu.

<ul style="list-style-type: none"> <li>When values are not available by the due date, estimates are acceptable.</li> <li>Do not report cumulative or year-to-date values.</li> <li>Leave blank spaces only where values are not normally reported.</li> </ul>		<ul style="list-style-type: none"> <li>Lorsque les valeurs ne sont pas disponibles à la date d'échéance, on peut accepter un estimé de ces valeurs.</li> <li>Ne donnez pas des chiffres cumulatifs.</li> <li>Laissez un espace en blanc seulement où les valeurs ne sont pas normalement rapportées.</li> </ul>	
<b>1. Shipments – Livraisons</b>		<b>2. Inventories – Stocks manufacturiers</b>	
Omit cents – Omettre les cents			
a) Goods of own manufacture Produits de propre fabrication .....	01	a) Raw materials, fuel, supplies, Matières premières, combustible, fournitures .....	04
b) Goods purchased for resale Produits achetés pour la revente .....	02	b) Goods in Process (gross value) Produits en cours (valeur brute) .....	05
<b>TOTAL</b> .....	03	c) Finished products of own manufacture Produits finis de propre fabrication .....	06
		d) Goods purchased for resale Produits achetés pour la revente .....	07
		<b>TOTAL</b> .....	08
<b>3. Orders – Commandes</b>		<b>4. Period – Période</b>	
Unfilled orders at month end Commandes non remplies à la fin du mois .....	09	Closing date of <b>accounting period</b> covered Date de clôture de la <b>période comptable</b>	10
		Month – Mois	Day – Jour
Name of contact – Nom de la personne-ressource		Tel. No. – N° de tél.	Date
		Area code. Ind. rég.	Y-A    M    D-J
Position – Fonction			
<b>Thank you for your cooperation – Merci de votre collaboration</b>			

**INFORMATION SHARING AGREEMENTS:**

**Section 11 of the federal Statistics Act** provides for the joint collection and sharing of information with provincial statistical agencies which (1) have been established under provincial legislation providing substantially the same provisions for confidentiality and penalties for disclosure of confidential information as the federal Statistics Act, and (2) have the provincial or territorial legislative authority to collect this information on their own. Section 11 therefore was designed to reduce response burden and to facilitate the production of consistent and high quality national and provincial statistics.

A Section 11 agreement is in effect with the Institut de la statistique du Québec with respect to establishments located within the boundaries of that province.

**ACCORDS DE PARTAGE DES DONNÉES :**

**L'article 11 de la Loi fédérale** sur la statistique prévoit la collecte conjointe et le partage des données avec les organismes statistiques provinciaux qui 1) ont été établis en vertu d'une loi provinciale prévoyant essentiellement le même degré de protection de la confidentialité et les mêmes sanctions relatives à la divulgation d'information confidentielle que la Loi fédérale sur la statistique, et 2) sont autorisés légalement, par leur province ou leur territoire à recueillir eux-mêmes l'information. L'article 11 vise donc à réduire le fardeau de réponse et à faciliter la production de statistiques cohérentes et de bonne qualité aux niveaux fédéral et provincial.

L'accord en vertu de l'article 11 a été conclu avec l'Institut de la statistique du Québec en ce qui a trait aux établissements situés à l'intérieur des limites de cette province.

Comments – Commentaires

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