



# Monthly Survey of Manufacturing

May 2003



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

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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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## Table of contents

	Page
<b>Highlights</b>	6
<b>Products and services</b>	10
<b>Statistical Tables</b>	
1. All Manufacturing Industries	11
2. Motor Vehicle, and Parts and Accessories Industries	12
3. All Manufacturing Industries except Motor Vehicle, Parts and Accessories Industries	13
4. Shipments by Major Group and Selected Industries	14
5. Inventories by Major Group and Selected Industries	16
6. Unfilled Orders by Selected Major Group and Industries	18
7. New Orders by Selected Major Group and Industries	20
8. Shipments and Inventory Owned for Selected Industries, Unadjusted	22
9. Inventories owned by stage of fabrication	30
10. Shipments by Major Group and Province, Unadjusted	31
<b>Survey Documentation</b>	37

## Highlights

Finished-product inventories continued to accumulate and unfilled orders remained lethargic in May, as manufacturing activity weakened further. Manufacturers' shipments fell 0.8% to \$42.4 billion, following April's sharp drop of 3.4%.

### Several hurdles facing the Canadian economy

In recent months, the strength of the Canadian economy has faced various obstacles. The war in Iraq contributed to soaring petroleum prices and, consequently, to record high shipment levels. April's outbreak of the severe acute respiratory syndrome (SARS), followed by a second wave in May, has been a significant blow to the Canadian tourism industries, especially in the Toronto area.

The detection of a single case of bovine spongiform encephalopathy (BSE), or mad cow disease, in Alberta resulted in the closure of foreign borders to the export of Canadian beef products. This ongoing situation had a negative impact on the meat products industry of the manufacturing sector.

The Business Conditions Survey reported that 31% of manufacturers would decrease production in the second quarter, because of concerns with lower levels of new and unfilled orders. Coupled with the appreciating value of the Canadian dollar and the ongoing weak state of the US economy, these factors will continue to test the strength of the Canadian manufacturers and the economy as a whole in the months to come.

### Shipments weaken in the second quarter

The second quarter began with widespread declines in manufacturing production. April was dominated by a sharp drop in petroleum prices, as well as lower shipments of motor vehicles and parts. In May, manufacturers reported lower shipments for a second month, as 13 of 21 industries, accounting for almost three-quarters of total shipments, reported decreases.

### Quebec manufacturers' shipments fall to a 17-month low

In May, seven provinces and the territories reported lower shipments. Widespread decreases in Quebec's manufacturing sector contributed to a \$158 million (-1.6%) decrease to \$9.7 billion, the lowest level of shipments since December 2001. The primary metals and petroleum industries were the main contributors to the decline.

Shipments in Alberta fell by \$71 million (-2.0%) to \$3.5 billion, the second decrease in a row. Following a strong first quarter, Alberta's manufacturing sector has been hit hard by April's steep decline in petroleum prices, as well as by the current problem of mad cow disease, which has shut down Canada's export market for beef products. Lower shipments of food, primarily due to the export ban, was the main contributor to Alberta's overall decline in shipments for May.

## Shipments by province and territory

	April 2003	May 2003	April to May 2003
Seasonally adjusted			
	\$ millions		% change
Newfoundland and Labrador	184	195	6.2
Prince Edward Island	109	114	4.5
Nova Scotia	737	737	0.0
New Brunswick	1,087	1,018	-6.3
Quebec	9,893	9,736	-1.6
Ontario	22,830	22,819	-0.0
Manitoba	982	950	-3.2
Saskatchewan	621	610	-1.8
Alberta	3,570	3,499	-2.0
British Columbia	2,782	2,760	-0.8
Yukon, Northwest Territories and Nunavut	6	5	-12.8

### The impact of mad cow disease

On May 20, a single case of mad cow disease was detected in Alberta. Key export markets, including the United States, Japan and other countries, quickly closed their borders to Canadian beef products. In May, shipments of meat products (including beef, pork and lamb, and excluding poultry) increased by a modest 2.5% at the Canada level, well below the average May increase observed in previous years. May is typically the month when consumers gear up for the summer barbecue season.

Alberta shipments of meat products dropped 5.6% in May, and animal slaughtering (excluding poultry) fell 8.4%. The decreases reflect the fact that the export ban on beef products was in effect for only the last 11 days of May. The impact is expected to be more significant in the coming months as the international trade ban remains.

### Manufacturing employment continues to decline in June

Employment in manufacturing continued its downward trend that began at the end of 2002. According to the latest release of the Labour Force Survey, manufacturing employment fell by 23,000 in June, the sixth decrease in the last seven months. There are now 89,000 fewer factory workers (-3.7%) than in November 2002.

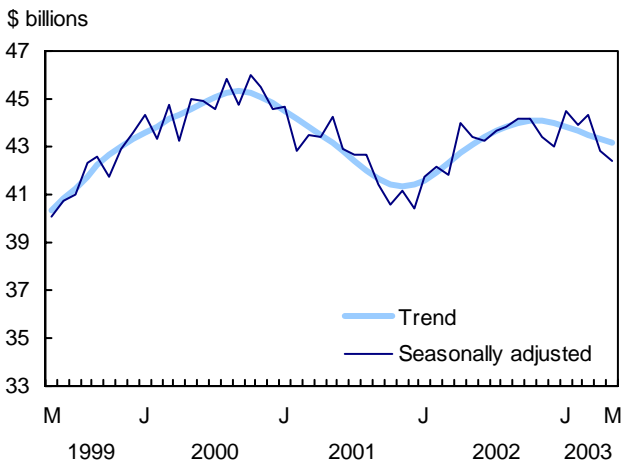
### Widespread decreases

The primary metals industry was the principal contributor to the lower shipments in May. Shipments declined 3.5% to \$2.6 billion. Falling US demand for primary metals, coupled with lower industrial prices in several sectors of the industry, had a negative impact on shipments in recent months.

Shipments of petroleum and coal products eased back 2.3% to \$2.9 billion, following April's steep 18.8% drop. As the war in Iraq drew to a close, prices of petroleum and coal products tumbled almost 18% since their apex of April. In addition to the price effects, several refineries have slowed production in recent months for maintenance purposes.

The food industry also contributed to lower shipments in May, reporting a 1.2% drop to \$5.3 billion. As noted above, a slowdown in the meat products industry due to the export ban on beef, was mostly responsible for the decline.

**Shipments decline for a second consecutive month**



**Inventories decline for the first time since January**

Inventories, which had been accumulating since February, fell 0.5% to \$63.4 billion in May. Despite the drop, manufacturing inventories continued their upward trend.

The main contributor to the decline was the aerospace products and parts industry. Aerospace inventories fell 2.8% to \$7.7 billion, the first decrease in four months. Plummeting orders and weak shipment levels over the last year and a half had a severe impact on the aerospace industry.

Inventories of petroleum and coal products, which reached a 19-month high in April, fell back 7.8% to \$1.6 billion in May. Meanwhile, inventories of motor vehicles decreased 3.8% to \$1.4 billion, the lowest level since September 1999. Manufacturers continued to streamline inventories, as demand for new motor vehicles in North America remained uncertain.

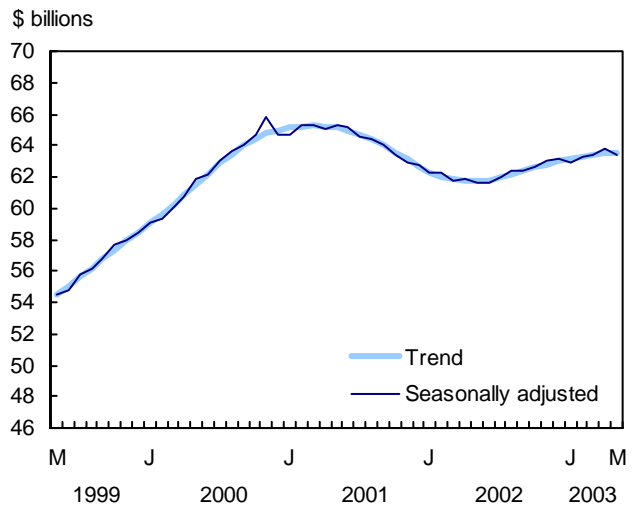
**Lower raw materials and goods-in-process pull down total inventories**

Decreases in raw materials and goods-in-process inventories contributed to the decline in total inventories. Raw materials fell 1.0% to \$27.5 billion, the lowest level since January. Meanwhile, goods-in-process inventories slipped 0.5% to \$15.8 billion in May, largely offsetting April's 0.6% increase.

**Finished-products continue to accumulate**

The ongoing weakness of the economy in the United States, Canada's largest trading partner, is contributing to the recent build-up of finished-product inventories. Finished-products increased 0.3% to \$20.1 billion in May, edging closer to the record high of \$20.2 billion established in June 2001. Following the fourth increase in a row, finished-product inventories are at the highest level since June 2001.

**Inventories decrease in May**



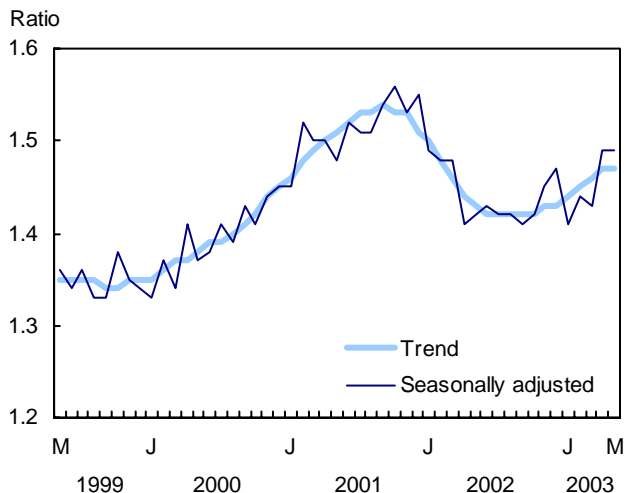
**Inventory-to-shipment ratio unchanged**

Following a big jump in April, the inventory-to-shipment ratio remained constant at 1.49 in May, the highest level since December 2001 (1.55). Declining shipments and inventories contributed to the stable ratio.

The inventory-to-shipment ratio had remained stable around 1.43 in the first quarter. A higher ratio indicates some difficulty by manufacturers to clear inventories as a result of weakening demand.

Despite May's increase in finished-product inventories, the finished-product inventory-to-shipment ratio was unchanged at 0.47 for the second consecutive month. In May, the ratio remained at the highest level since the economic downturn of 2001. The ratio has been on an upward trend since the autumn of 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 remains stable**



**Unfilled orders remain bleak**

In May, unfilled orders fell 3.4% to \$40.5 billion, the lowest level since June 1998. Unfilled orders have decreased for nine consecutive months, the longest string of declines since 14 were reported during the 1990-1991 recession.

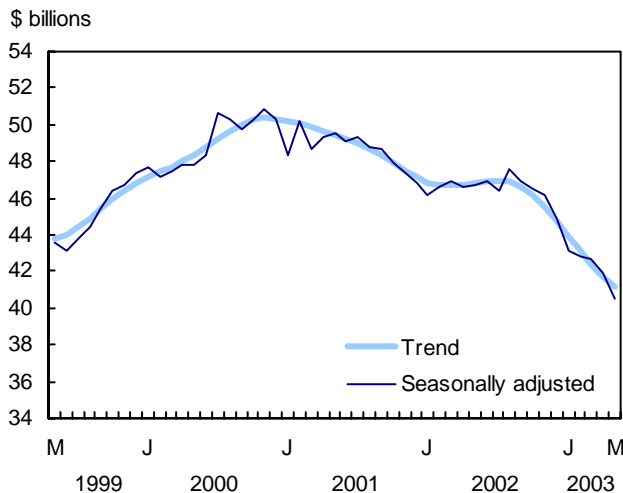
May's decrease was concentrated in the machinery and aerospace products and parts industries. Following a strong build-up earlier in the year, unfilled orders for the machinery industry declined 10.8% to \$6.3 billion in May. Partly as a result of the sharp drop in petroleum prices, significant decreases in orders were reported by the mining and oil and gas field machinery manufacturing industry.

The ongoing downturn in the global aviation sector continued to pose obstacles for aerospace manufacturing. In May, the aerospace products and parts industry reported a 3.2% drop in unfilled orders to \$12.7 billion. Unfilled orders have now decreased for 20 consecutive months, and are almost 40% below levels of September 2001, the last month to report higher orders for aerospace products and parts.

**Fewer new orders in May**

Manufacturers received fewer new orders in May. New orders fell 2.5% to \$41.0 billion, the second decline in a row. Decreases were concentrated in the machinery and primary metals industries.

**Unfilled orders continue to fall**





**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.

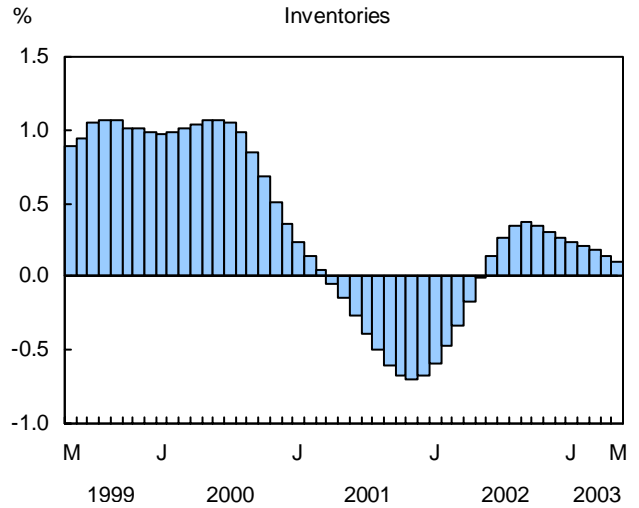
**Durable goods industries** include clothing, wood products, non-metallic mineral products, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment, appliance and components, transportation equipment, furniture and related products and miscellaneous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

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

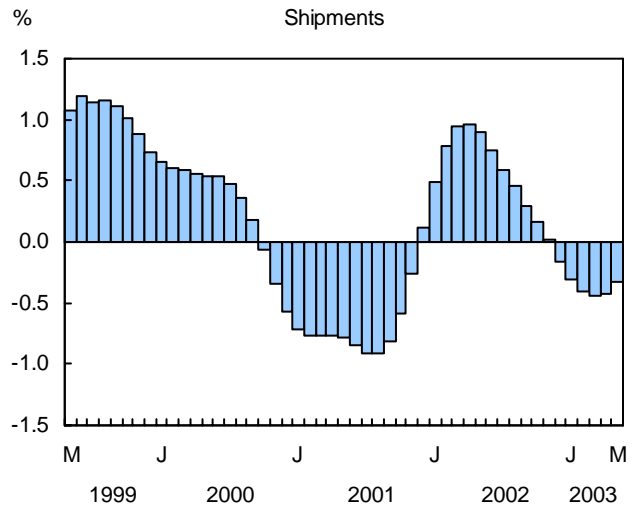
**New orders** are those received whether shipped in the current month or not. They are measured as the sum of shipments for the current month plus the change in unfilled orders. Some people interpret new orders as orders that will lead to future demand. This is inappropriate since the "new orders" variable 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.

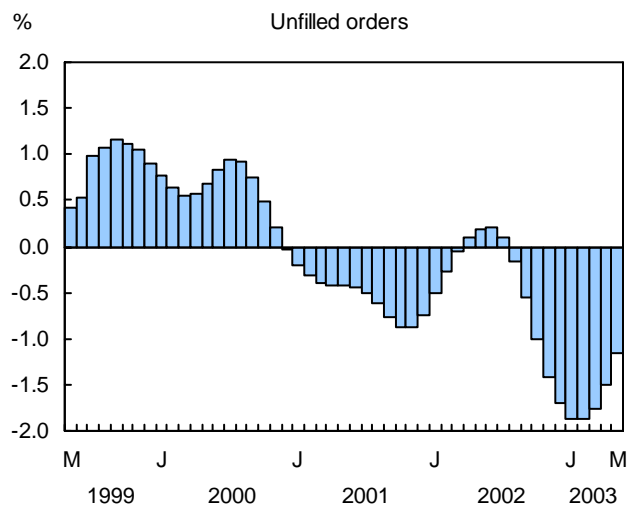
**Monthly change in trend**



**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

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October 15, 2003  
November 14, 2003  
December 16, 2003  
January 21, 2004  
February 13, 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										
May 2002	46,742	61,933	47,099	46,978	43,380	61,657	46,761	43,500		
June 2002	44,509	61,190	46,755	44,165	43,228	61,612	46,933	43,400		
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	45,547	64,591	42,502	45,462	44,320	63,433	42,716	44,230		
April 2003	43,276	64,318	41,573	42,347	42,799	63,717	41,971	42,054		
May 2003	44,697	63,475	40,414	43,538	42,442	63,405	40,529	41,001		
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	
May 2002	-1.4	0.9	-0.3	0.0	1.42	1.43	0.3	0.2	-0.4	1.0
June 2002	-0.3	0.8	-0.1	0.1	1.43	1.42	0.4	0.2	-0.2	0.8
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	0.3	1.42	1.42	2.4	-0.2	4.2	0.2
September 2002	0.6	0.3	-0.1	0.4	1.41	1.42	-1.2	-0.6	-3.2	-0.1
October 2002	0.0	0.2	0.4	0.4	1.42	1.42	-1.0	-1.0	0.3	-0.3
November 2002	-1.7	0.0	0.7	0.3	1.45	1.43	-0.8	-1.4	-1.5	-0.4
December 2002	-0.9	-0.2	0.3	0.3	1.47	1.43	-2.8	-1.7	-3.1	-0.4
January 2003	3.5	-0.3	-0.4	0.2	1.41	1.44	-3.8	-1.9	2.7	-0.4
February 2003	-1.4	-0.4	0.6	0.2	1.44	1.45	-0.7	-1.9	1.8	-0.4
March 2003	1.0	-0.4	0.2	0.2	1.43	1.46	-0.2	-1.8	1.5	-0.3
April 2003	-3.4	-0.4	0.4	0.1	1.49	1.47	-1.7	-1.5	-4.9	-0.1
May 2003	-0.8	-0.3	-0.5	0.1	1.49	1.47	-3.4	-1.1	-2.5	0.1

**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										
May 2002	9,399	3,511	1,702	9,468	8,322	3,478	1,715	8,365		
June 2002	8,707	3,356	1,697	8,702	8,363	3,439	1,699	8,348		
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	8,930	3,525	1,715	8,859	8,356	3,491	1,725	8,302		
April 2003	8,537	3,503	1,622	8,444	8,041	3,494	1,682	7,997		
May 2003	8,734	3,419	1,581	8,694	8,030	3,402	1,619	7,967		
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	
May 2002	-6.3	1.2	1.4	0.6	0.42	0.41	2.6	2.9	-6.2	1.3
June 2002	0.5	0.8	-1.1	0.6	0.41	0.41	-0.9	3.2	-0.2	0.8
July 2002	5.3	0.3	4.0	0.6	0.41	0.41	2.0	3.2	5.9	0.3
August 2002	-2.4	-0.1	-2.3	0.6	0.41	0.42	9.2	2.7	-1.0	-0.1
September 2002	-2.8	-0.3	0.6	0.5	0.42	0.42	7.3	1.8	-3.0	-0.5
October 2002	-0.6	-0.5	-1.8	0.4	0.42	0.42	-3.5	0.6	-3.1	-0.8
November 2002	-2.1	-0.7	3.9	0.2	0.44	0.43	-1.4	-0.6	-1.6	-0.9
December 2002	-10.7	-0.7	4.6	0.0	0.52	0.43	-4.1	-1.6	-11.3	-1.0
January 2003	13.5	-0.7	-5.3	-0.2	0.43	0.43	-2.0	-2.4	14.2	-0.8
February 2003	-1.9	-0.5	0.8	-0.5	0.44	0.43	-2.1	-2.8	-2.0	-0.6
March 2003	3.5	-0.4	-2.5	-0.6	0.42	0.43	-3.0	-3.0	3.3	-0.5
April 2003	-3.8	-0.4	0.1	-0.6	0.43	0.43	-2.5	-2.7	-3.7	-0.3
May 2003	-0.1	-0.3	-2.6	-0.5	0.42	0.43	-3.7	-2.2	-0.4	-0.2

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										
May 2002	37,343	58,421	45,397	37,511	35,058	58,179	45,046	35,135		
June 2002	35,801	57,834	45,058	35,462	34,865	58,174	45,234	35,052		
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	36,617	61,066	40,787	36,603	35,964	59,942	40,991	35,928		
April 2003	34,739	60,815	39,951	33,903	34,758	60,223	40,289	34,056		
May 2003	35,963	60,056	38,832	34,844	34,413	60,002	38,910	33,034		
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	
May 2002	-0.1	0.8	-0.4	0.0	1.66	1.68	0.2	0.1	1.0	0.9
June 2002	-0.6	0.7	0.0	0.1	1.67	1.67	0.4	0.1	-0.2	0.7
July 2002	-0.1	0.7	0.4	0.2	1.68	1.66	-1.2	0.0	-2.1	0.5
August 2002	1.2	0.6	0.9	0.3	1.67	1.66	2.1	-0.3	5.5	0.2
September 2002	1.5	0.5	-0.2	0.4	1.64	1.65	-1.6	-0.7	-3.2	0.0
October 2002	0.1	0.3	0.5	0.4	1.65	1.65	-0.9	-1.1	1.1	-0.2
November 2002	-1.6	0.2	0.5	0.3	1.68	1.66	-0.8	-1.4	-1.4	-0.3
December 2002	1.4	0.0	0.0	0.3	1.66	1.66	-2.8	-1.7	-1.2	-0.3
January 2003	1.5	-0.2	-0.1	0.3	1.64	1.67	-3.9	-1.8	0.3	-0.4
February 2003	-1.3	-0.4	0.6	0.3	1.67	1.68	-0.7	-1.8	2.7	-0.3
March 2003	0.4	-0.4	0.4	0.2	1.67	1.69	-0.1	-1.7	1.1	-0.3
April 2003	-3.4	-0.4	0.5	0.2	1.73	1.70	-1.7	-1.5	-5.2	-0.1
May 2003	-1.0	-0.3	-0.4	0.1	1.74	1.71	-3.4	-1.1	-3.0	0.1

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

	NAICS Code	Unadjusted					
		Current periods					
		May 2003	April 2003	March 2003	February 2003		
		\$ millions					
Food manufacturing	311	5,577	5,239	5,212	4,743		
Beverage and tobacco product manufacturing	312	1,210	1,073	1,078	902		
Textile mills	313	273	258	266	233		
Textile product mills	314	211	192	193	182		
Clothing manufacturing	315	468	510	545	530		
Leather and allied product manufacturing	316	48	43	49	45		
Wood product manufacturing	321	2,378	2,325	2,328	2,175		
Paper manufacturing	322	2,741	2,723	2,783	2,518		
Printing and related support activities	323	860	865	905	773		
Petroleum and coal products manufacturing	324	2,780	2,766	3,580	3,214		
Chemical manufacturing	325	3,783	3,443	3,545	3,115		
Plastics and rubber products manufacturing	326	2,084	2,056	1,978	1,781		
Non-metallic mineral product manufacturing	327	1,122	957	832	699		
Primary metal manufacturing	331	2,752	2,823	2,945	2,741		
Fabricated metal product manufacturing	332	2,366	2,300	2,315	2,093		
Machinery manufacturing	333	1,942	1,888	2,075	1,802		
Computer and electronic product manufacturing	334	1,438	1,342	1,718	1,420		
Electrical equipment, appliance and component manufacturing	335	772	738	802	698		
Transportation equipment manufacturing	336	10,391	10,249	10,864	9,759		
Motor vehicle manufacturing	3361	6,001	5,868	6,051	5,513		
Motor vehicle body and trailer manufacturing	3362	264	256	259	202		
Motor vehicle parts manufacturing	3363	2,733	2,669	2,879	2,698		
Aerospace product and parts manufacturing	3364	918	980	1,093	930		
Railroad rolling stock manufacturing	3365	258	234	292	217		
Ship and boat building	3366	113	99	100	75		
Furniture and related product manufacturing	337	1,056	1,042	1,070	973		
Miscellaneous manufacturing	339	445	443	463	422		
<b>Non-durable goods industries</b>		<b>19,567</b>	<b>18,658</b>	<b>19,590</b>	<b>17,505</b>		
<b>Durable goods industries</b>		<b>25,130</b>	<b>24,618</b>	<b>25,957</b>	<b>23,312</b>		
<b>Manufacturing</b>		<b>44,697</b>	<b>43,276</b>	<b>45,547</b>	<b>40,817</b>		
		Previous year		Year-to-date		Annual	
		May 2002	April 2002	% Change from 2002	2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	5,555	5,050	2.8	25,599	1.1	62,911
Beverage and tobacco product manufacturing	312	1,175	1,061	2.4	5,109	3.7	13,304
Textile mills	313	298	290	-9.4	1,265	-3.7	3,210
Textile product mills	314	234	224	-8.9	954	0.5	2,520
Clothing manufacturing	315	528	576	-7.3	2,535	-3.0	6,785
Leather and allied product manufacturing	316	53	50	-14.4	231	-9.9	777
Wood product manufacturing	321	2,896	2,794	-9.9	11,376	7.2	29,498
Paper manufacturing	322	2,706	2,667	2.0	13,446	-4.4	32,726
Printing and related support activities	323	878	883	0.7	4,196	-4.1	10,061
Petroleum and coal products manufacturing	324	2,612	2,462	33.5	15,515	1.1	32,350
Chemical manufacturing	325	3,611	3,222	11.4	17,193	4.0	37,769
Plastics and rubber products manufacturing	326	2,167	2,072	2.9	9,760	6.7	23,002
Non-metallic mineral product manufacturing	327	1,122	941	6.5	4,322	9.7	11,586
Primary metal manufacturing	331	2,911	2,786	6.2	14,218	8.8	32,216
Fabricated metal product manufacturing	332	2,445	2,350	0.1	11,214	2.8	27,510
Machinery manufacturing	333	2,128	2,110	-6.1	9,521	1.3	24,113
Computer and electronic product manufacturing	334	1,905	1,670	-17.0	7,313	-16.5	21,255
Electrical equipment, appliance and component manufacturing	335	816	825	-5.4	3,739	-7.6	9,335
Transportation equipment manufacturing	336	11,127	11,186	-1.2	51,395	4.6	119,746
Motor vehicle manufacturing	3361	6,311	6,402	-0.7	28,844	5.7	65,797
Motor vehicle body and trailer manufacturing	3362	253	261	2.6	1,204	8.5	2,704
Motor vehicle parts manufacturing	3363	3,088	2,970	-2.4	13,735	10.2	32,741
Aerospace product and parts manufacturing	3364	973	1,003	-2.6	5,049	-15.0	12,472
Railroad rolling stock manufacturing	3365	238	207	11.1	1,304	5.4	2,878
Ship and boat building	3366	147	137	-26.1	466	20.6	1,242
Furniture and related product manufacturing	337	1,054	1,045	1.8	5,141	2.4	12,303
Miscellaneous manufacturing	339	520	442	-0.2	2,176	8.5	5,527
<b>Non-durable goods industries</b>		<b>19,289</b>	<b>17,982</b>	<b>7.8</b>	<b>93,268</b>	<b>1.1</b>	<b>218,631</b>
<b>Durable goods industries</b>		<b>27,452</b>	<b>26,726</b>	<b>-2.5</b>	<b>122,949</b>	<b>2.5</b>	<b>299,874</b>
<b>Manufacturing</b>		<b>46,742</b>	<b>44,708</b>	<b>1.7</b>	<b>216,217</b>	<b>1.9</b>	<b>518,505</b>

Table 4

## Shipments by major group and selected industries - concluded

	NAICS Code	Change from April	Seasonally adjusted						
			Current periods						
			May 2003	April 2003	March 2003	February 2003			
			\$ millions						
Food manufacturing	311	-64	5,316	5,379	5,363	5,363			
Beverage and tobacco product manufacturing	312	18	1,134	1,117	1,133	1,113			
Textile mills	313	5	252	247	252	247			
Textile product mills	314	4	193	189	190	200			
Clothing manufacturing	315	-22	502	523	514	530			
Leather and allied product manufacturing	316	0	56	56	57	57			
Wood product manufacturing	321	-40	2,151	2,191	2,259	2,360			
Paper manufacturing	322	15	2,753	2,738	2,737	2,669			
Printing and related support activities	323	10	847	838	856	848			
Petroleum and coal products manufacturing	324	-67	2,862	2,929	3,605	3,431			
Chemical manufacturing	325	21	3,328	3,307	3,417	3,390			
Plastics and rubber products manufacturing	326	-40	1,900	1,940	1,940	1,951			
Non-metallic mineral product manufacturing	327	-17	984	1,001	1,026	1,013			
Primary metal manufacturing	331	-96	2,644	2,740	2,802	2,866			
Fabricated metal product manufacturing	332	-46	2,270	2,316	2,317	2,324			
Machinery manufacturing	333	49	1,920	1,871	1,934	1,929			
Computer and electronic product manufacturing	334	-24	1,460	1,484	1,507	1,575			
Electrical equipment, appliance and component manufacturing	335	11	752	741	749	747			
Transportation equipment manufacturing	336	-51	9,664	9,714	10,172	9,788			
Motor vehicle manufacturing	3361	25	5,501	5,476	5,640	5,332			
Motor vehicle body and trailer manufacturing	3362	12	231	220	241	222			
Motor vehicle parts manufacturing	3363	-36	2,528	2,564	2,716	2,743			
Aerospace product and parts manufacturing	3364	2	959	957	1,053	1,064			
Railroad rolling stock manufacturing	3365	-12	257	269	249	221			
Ship and boat building	3366	-1	84	85	84	80			
Furniture and related product manufacturing	337	-4	1,027	1,031	1,027	1,039			
Miscellaneous manufacturing	339	-19	428	448	463	461			
<b>Non-durable goods industries</b>		<b>-98</b>	<b>18,640</b>	<b>18,739</b>	<b>19,552</b>	<b>19,269</b>			
<b>Durable goods industries</b>		<b>-258</b>	<b>23,802</b>	<b>24,060</b>	<b>24,769</b>	<b>24,632</b>			
<b>Manufacturing</b>		<b>-357</b>	<b>42,442</b>	<b>42,799</b>	<b>44,320</b>	<b>43,901</b>			
			Change from previous month		Trend change from previous month				
			May 2003	April 2003	March 2003	May 2003	April 2003	March 2003	February 2003
			percentage						
Food manufacturing	311	-1.2	0.3	0.0	0.2	0.3	0.3	0.3	0.3
Beverage and tobacco product manufacturing	312	1.6	-1.4	1.7	0.1	0.1	0.1	0.1	0.1
Textile mills	313	2.0	-2.0	2.3	0.0	-0.1	-0.3	-0.5	-0.5
Textile product mills	314	2.2	-0.7	-4.6	-0.4	-0.7	-1.0	-1.2	-1.2
Clothing manufacturing	315	-4.1	1.8	-2.9	-1.5	-1.9	-2.1	-2.0	-2.0
Leather and allied product manufacturing	316	-0.4	-2.0	0.3	-0.5	-1.3	-1.9	-2.4	-2.4
Wood product manufacturing	321	-1.8	-3.0	-4.3	-1.6	-1.9	-2.0	-1.8	-1.8
Paper manufacturing	322	0.5	0.0	2.5	0.4	0.3	0.1	-0.1	-0.1
Printing and related support activities	323	1.1	-2.1	1.0	-0.1	-0.1	0.0	0.2	0.2
Petroleum and coal products manufacturing	324	-2.3	-18.8	5.1	0.3	0.0	-0.2	-0.2	-0.2
Chemical manufacturing	325	0.6	-3.2	0.8	-0.5	-0.4	-0.2	0.2	0.2
Plastics and rubber products manufacturing	326	-2.0	0.0	-0.6	-0.3	-0.3	-0.3	-0.2	-0.2
Non-metallic mineral product manufacturing	327	-1.7	-2.4	1.2	-0.7	-0.6	-0.4	0.0	0.0
Primary metal manufacturing	331	-3.5	-2.2	-2.2	-0.4	-0.4	-0.3	0.0	0.0
Fabricated metal product manufacturing	332	-2.0	0.0	-0.3	-0.3	-0.2	-0.1	0.0	0.0
Machinery manufacturing	333	2.6	-3.2	0.3	-0.1	-0.4	-0.7	-0.9	-0.9
Computer and electronic product manufacturing	334	-1.6	-1.5	-4.3	-1.2	-1.6	-1.9	-2.1	-2.1
Electrical equipment, appliance and component manufacturing	335	1.6	-1.1	0.2	0.0	-0.1	-0.2	-0.3	-0.3
Transportation equipment manufacturing	336	-0.5	-4.5	3.9	-0.5	-0.6	-0.6	-0.7	-0.7
Motor vehicle manufacturing	3361	0.5	-2.9	5.8	0.2	0.2	0.1	-0.1	-0.1
Motor vehicle body and trailer manufacturing	3362	5.4	-8.9	8.3	-0.1	-0.1	0.0	0.0	0.0
Motor vehicle parts manufacturing	3363	-1.4	-5.6	-1.0	-1.4	-1.6	-1.6	-1.4	-1.4
Aerospace product and parts manufacturing	3364	0.2	-9.2	-1.0	-1.5	-1.9	-1.8	-1.2	-1.2
Railroad rolling stock manufacturing	3365	-4.5	8.3	12.7	0.7	0.7	0.7	0.5	0.5
Ship and boat building	3366	-1.4	1.6	4.5	1.2	1.5	1.6	1.2	1.2
Furniture and related product manufacturing	337	-0.4	0.4	-1.1	-0.3	-0.4	-0.4	-0.3	-0.3
Miscellaneous manufacturing	339	-4.3	-3.2	0.4	-1.4	-1.5	-1.4	-1.1	-1.1
<b>Non-durable goods industries</b>		<b>-0.5</b>	<b>-4.2</b>	<b>1.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Durable goods industries</b>		<b>-1.1</b>	<b>-2.9</b>	<b>0.6</b>	<b>-0.6</b>	<b>-0.7</b>	<b>-0.8</b>	<b>-0.7</b>	<b>-0.7</b>
<b>Manufacturing</b>		<b>-0.8</b>	<b>-3.4</b>	<b>1.0</b>	<b>-0.3</b>	<b>-0.4</b>	<b>-0.4</b>	<b>-0.4</b>	<b>-0.4</b>

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

	NAICS Code	Unadjusted					
		Current periods					
		May 2003	April 2003	March 2003	February 2003		
		\$ millions					
Food manufacturing	311	4,795	4,800	4,901	4,873		
Beverage and tobacco product manufacturing	312	1,763	1,752	1,771	1,766		
Textile mills	313	489	484	462	459		
Textile product mills	314	313	328	325	314		
Clothing manufacturing	315	1,290	1,226	1,188	1,174		
Leather and allied product manufacturing	316	137	131	123	124		
Wood product manufacturing	321	4,604	5,024	5,503	5,173		
Paper manufacturing	322	3,639	3,661	3,623	3,578		
Printing and related support activities	323	696	709	713	669		
Petroleum and coal products manufacturing	324	1,597	1,758	1,691	1,609		
Chemical manufacturing	325	6,062	6,164	6,099	5,909		
Plastics and rubber products manufacturing	326	2,245	2,242	2,217	2,152		
Non-metallic mineral product manufacturing	327	1,254	1,256	1,232	1,222		
Primary metal manufacturing	331	4,865	4,861	4,869	4,984		
Fabricated metal product manufacturing	332	3,680	3,723	3,669	3,638		
Machinery manufacturing	333	4,587	4,545	4,464	4,523		
Computer and electronic product manufacturing	334	4,339	4,316	4,254	4,420		
Electrical equipment, appliance and component manufacturing	335	1,399	1,424	1,388	1,341		
Transportation equipment manufacturing	336	13,112	13,274	13,435	13,456		
Motor vehicle manufacturing	3361	1,470	1,503	1,597	1,679		
Motor vehicle body and trailer manufacturing	3362	471	485	502	509		
Motor vehicle parts manufacturing	3363	1,949	1,999	1,928	1,951		
Aerospace product and parts manufacturing	3364	7,746	7,769	7,884	7,695		
Railroad rolling stock manufacturing	3365	1,142	1,197	1,189	1,283		
Ship and boat building	3366	120	126	130	132		
Furniture and related product manufacturing	337	1,536	1,539	1,566	1,509		
Miscellaneous manufacturing	339	1,073	1,100	1,097	1,088		
<b>Non-durable goods industries</b>		<b>21,736</b>	<b>22,029</b>	<b>21,925</b>	<b>21,453</b>		
<b>Durable goods industries</b>		<b>41,738</b>	<b>42,289</b>	<b>42,665</b>	<b>42,527</b>		
<b>Manufacturing</b>		<b>63,475</b>	<b>64,318</b>	<b>64,591</b>	<b>63,980</b>		
		Previous year		Year-to-date		Average per month	
		May 2002	April 2002	% Change from 2002	Average 2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	4,747	4,714	2.1	4,847	3.4	4,832
Beverage and tobacco product manufacturing	312	1,769	1,762	2.0	1,751	5.0	1,717
Textile mills	313	495	524	-9.2	471	-9.3	486
Textile product mills	314	326	321	-0.6	317	-13.1	324
Clothing manufacturing	315	1,201	1,161	3.4	1,204	-12.5	1,174
Leather and allied product manufacturing	316	147	139	-4.0	127	-8.9	137
Wood product manufacturing	321	4,289	4,745	3.7	5,002	-6.3	4,449
Paper manufacturing	322	3,619	3,644	-0.8	3,600	-7.0	3,548
Printing and related support activities	323	692	717	-3.9	685	-5.7	702
Petroleum and coal products manufacturing	324	1,595	1,671	0.4	1,658	-10.6	1,614
Chemical manufacturing	325	5,180	5,365	14.5	5,965	4.0	5,277
Plastics and rubber products manufacturing	326	2,024	2,027	9.1	2,201	0.8	2,039
Non-metallic mineral product manufacturing	327	1,239	1,266	0.6	1,237	2.0	1,206
Primary metal manufacturing	331	4,454	4,474	9.6	4,920	0.4	4,657
Fabricated metal product manufacturing	332	3,526	3,486	5.6	3,658	2.1	3,492
Machinery manufacturing	333	4,626	4,682	-2.6	4,548	1.2	4,609
Computer and electronic product manufacturing	334	4,683	4,855	-12.2	4,349	-22.5	4,654
Electrical equipment, appliance and component manufacturing	335	1,406	1,406	-1.4	1,379	-16.3	1,384
Transportation equipment manufacturing	336	13,475	13,101	0.6	13,257	-1.3	13,441
Motor vehicle manufacturing	3361	1,750	1,739	-8.8	1,580	2.9	1,730
Motor vehicle body and trailer manufacturing	3362	421	432	15.9	484	-6.3	417
Motor vehicle parts manufacturing	3363	1,761	1,714	14.1	1,952	3.9	1,762
Aerospace product and parts manufacturing	3364	7,878	7,589	0.5	7,684	0.3	7,817
Railroad rolling stock manufacturing	3365	1,293	1,273	-3.8	1,226	-14.0	1,338
Ship and boat building	3366	117	127	-26.1	129	-35.7	145
Furniture and related product manufacturing	337	1,402	1,420	10.3	1,527	1.1	1,427
Miscellaneous manufacturing	339	1,037	1,003	7.3	1,090	3.3	1,059
<b>Non-durable goods industries</b>		<b>20,595</b>	<b>20,885</b>	<b>4.7</b>	<b>21,623</b>	<b>-0.7</b>	<b>20,676</b>
<b>Durable goods industries</b>		<b>41,338</b>	<b>41,600</b>	<b>1.0</b>	<b>42,170</b>	<b>-4.7</b>	<b>41,553</b>
<b>Manufacturing</b>		<b>61,933</b>	<b>62,485</b>	<b>2.2</b>	<b>63,793</b>	<b>-3.4</b>	<b>62,229</b>



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

	NAICS Code	Change from April	Seasonally adjusted						
			Current periods						
			May 2003	April 2003	March 2003	February 2003			
			\$ millions						
Food manufacturing	311	-18	4,870	4,888	4,964	4,947			
Beverage and tobacco product manufacturing	312	7	1,705	1,698	1,716	1,749			
Textile mills	313	7	480	474	459	455			
Textile product mills	314	-11	312	322	319	312			
Clothing manufacturing	315	10	1,239	1,229	1,199	1,208			
Leather and allied product manufacturing	316	-2	128	130	128	136			
Wood product manufacturing	321	30	4,711	4,681	4,689	4,559			
Paper manufacturing	322	-8	3,565	3,573	3,546	3,525			
Printing and related support activities	323	1	708	707	697	671			
Petroleum and coal products manufacturing	324	-134	1,586	1,720	1,632	1,600			
Chemical manufacturing	325	155	6,090	5,935	5,902	5,784			
Plastics and rubber products manufacturing	326	24	2,214	2,191	2,173	2,131			
Non-metallic mineral product manufacturing	327	7	1,221	1,214	1,183	1,207			
Primary metal manufacturing	331	-30	4,975	5,006	5,028	5,046			
Fabricated metal product manufacturing	332	-55	3,652	3,706	3,649	3,619			
Machinery manufacturing	333	53	4,590	4,537	4,501	4,527			
Computer and electronic product manufacturing	334	65	4,344	4,279	4,284	4,353			
Electrical equipment, appliance and component manufacturing	335	-36	1,367	1,403	1,377	1,353			
Transportation equipment manufacturing	336	-365	13,050	13,415	13,352	13,546			
Motor vehicle manufacturing	3361	-58	1,446	1,504	1,573	1,644			
Motor vehicle body and trailer manufacturing	3362	4	461	458	469	488			
Motor vehicle parts manufacturing	3363	-35	1,956	1,990	1,918	1,935			
Aerospace product and parts manufacturing	3364	-222	7,719	7,941	7,870	7,843			
Railroad rolling stock manufacturing	3365	-54	1,142	1,197	1,189	1,283			
Ship and boat building	3366	0	125	125	125	124			
Furniture and related product manufacturing	337	12	1,536	1,524	1,554	1,501			
Miscellaneous manufacturing	339	-22	1,062	1,084	1,082	1,079			
<b>Non-durable goods industries</b>		<b>19</b>	<b>21,658</b>	<b>21,639</b>	<b>21,535</b>	<b>21,310</b>			
<b>Durable goods industries</b>		<b>-332</b>	<b>41,747</b>	<b>42,078</b>	<b>41,898</b>	<b>41,997</b>			
<b>Manufacturing</b>		<b>-312</b>	<b>63,405</b>	<b>63,717</b>	<b>63,433</b>	<b>63,307</b>			
			Change from previous month		Trend change from previous month				
			May 2003	April 2003	March 2003	May 2003	April 2003	March 2003	February 2003
			percentage						
Food manufacturing	311	-0.4	-1.5	0.3	-0.2	-0.2	-0.1	0.0	
Beverage and tobacco product manufacturing	312	0.4	-1.0	-1.9	-0.5	-0.5	-0.6	-0.6	
Textile mills	313	1.4	3.2	0.9	0.5	0.5	0.4	0.2	
Textile product mills	314	-3.3	1.1	2.2	-0.3	-0.2	-0.2	-0.4	
Clothing manufacturing	315	0.8	2.5	-0.7	0.5	0.7	0.7	0.7	
Leather and allied product manufacturing	316	-1.8	1.6	-5.8	-0.4	-0.6	-0.7	-0.9	
Wood product manufacturing	321	0.6	-0.2	2.8	0.6	0.7	0.9	0.9	
Paper manufacturing	322	-0.2	0.8	0.6	0.3	0.2	0.2	0.2	
Printing and related support activities	323	0.2	1.4	3.8	0.6	0.6	0.6	0.4	
Petroleum and coal products manufacturing	324	-7.8	5.4	2.0	1.1	1.2	1.1	1.0	
Chemical manufacturing	325	2.6	0.6	2.0	0.9	1.2	1.4	1.5	
Plastics and rubber products manufacturing	326	1.1	0.8	2.0	0.5	0.5	0.6	0.7	
Non-metallic mineral product manufacturing	327	0.6	2.6	-2.0	-0.3	-0.3	-0.3	-0.2	
Primary metal manufacturing	331	-0.6	-0.4	-0.4	0.1	0.2	0.4	0.6	
Fabricated metal product manufacturing	332	-1.5	1.6	0.8	0.2	0.4	0.5	0.6	
Machinery manufacturing	333	1.2	0.8	-0.6	-0.2	-0.3	-0.3	-0.3	
Computer and electronic product manufacturing	334	1.5	-0.1	-1.6	0.0	-0.2	-0.3	-0.4	
Electrical equipment, appliance and component manufacturing	335	-2.6	1.9	1.8	-0.1	0.1	0.1	0.1	
Transportation equipment manufacturing	336	-2.7	0.5	-1.4	-0.3	-0.4	-0.4	-0.4	
Motor vehicle manufacturing	3361	-3.8	-4.4	-4.3	-1.8	-2.2	-2.4	-2.3	
Motor vehicle body and trailer manufacturing	3362	0.8	-2.5	-3.9	-0.1	0.3	0.7	1.1	
Motor vehicle parts manufacturing	3363	-1.7	3.8	-0.9	0.6	0.7	0.9	1.1	
Aerospace product and parts manufacturing	3364	-2.8	0.9	0.3	0.1	0.2	0.2	0.1	
Railroad rolling stock manufacturing	3365	-4.5	0.6	-7.3	-2.2	-3.0	-3.5	-3.5	
Ship and boat building	3366	0.1	-0.3	0.7	-0.1	-0.1	-0.2	-0.1	
Furniture and related product manufacturing	337	0.8	-1.9	3.5	0.3	0.4	0.5	0.6	
Miscellaneous manufacturing	339	-2.0	0.2	0.3	-0.9	-0.9	-0.9	-0.8	
<b>Non-durable goods industries</b>		<b>0.1</b>	<b>0.5</b>	<b>1.1</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	
<b>Durable goods industries</b>		<b>-0.8</b>	<b>0.4</b>	<b>-0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	
<b>Manufacturing</b>		<b>-0.5</b>	<b>0.4</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	

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

	NAICS Code	Unadjusted					
		Current periods					
		May 2003	April 2003	March 2003	February 2003		
\$ millions							
Textile mills	313	233	233	242	266		
Textile product mills	314	62	72	75	74		
Clothing manufacturing	315	338	357	339	282		
Leather and allied product manufacturing	316	37	36	31	25		
Plastics and rubber products manufacturing	326	1,193	1,290	1,307	1,250		
Primary metal manufacturing	331	1,862	1,883	1,705	1,743		
Fabricated metal product manufacturing	332	2,760	2,754	2,839	2,881		
Machinery manufacturing	333	6,334	7,098	7,234	6,737		
Computer and electronic product manufacturing	334	3,928	3,907	4,077	4,026		
Electrical equipment, appliance and component manufacturing	335	1,011	1,014	1,014	1,035		
Transportation equipment manufacturing	336	19,762	19,930	20,686	21,332		
Motor vehicle manufacturing	3361	759	812	861	912		
Motor vehicle body and trailer manufacturing	3362	625	619	630	661		
Motor vehicle parts manufacturing	3363	823	810	855	874		
Aerospace product and parts manufacturing	3364	12,640	12,675	13,382	13,761		
Ship and boat building	3366	58	58	32	36		
Miscellaneous manufacturing	339	155	151	163	190		
<b>Non-durable goods industries</b>		<b>2,845</b>	<b>3,029</b>	<b>3,014</b>	<b>3,031</b>		
<b>Durable goods industries</b>		<b>37,569</b>	<b>38,544</b>	<b>39,488</b>	<b>39,557</b>		
<b>Manufacturing</b>		<b>40,414</b>	<b>41,573</b>	<b>42,502</b>	<b>42,588</b>		
		Previous year		Year-to-date		Average per month	
		May 2002	April 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
Textile mills	313	281	289	-11.8	248	9.3	276
Textile product mills	314	51	57	39.4	72	2.7	55
Clothing manufacturing	315	351	355	-7.1	319	-7.0	324
Leather and allied product manufacturing	316	44	39	-6.1	30	-18.2	31
Plastics and rubber products manufacturing	326	1,128	1,206	5.8	1,273	15.6	1,254
Primary metal manufacturing	331	1,947	1,905	-0.1	1,783	25.1	1,795
Fabricated metal product manufacturing	332	2,834	2,907	-2.8	2,821	0.3	2,878
Machinery manufacturing	333	6,688	6,624	-1.2	6,762	4.3	6,709
Computer and electronic product manufacturing	334	3,865	3,855	8.5	4,025	-8.4	3,977
Electrical equipment, appliance and component manufacturing	335	969	930	7.8	1,023	-30.5	977
Transportation equipment manufacturing	336	26,257	26,175	-20.1	20,653	-8.7	25,566
Motor vehicle manufacturing	3361	1,039	1,014	-14.1	853	4.2	1,052
Motor vehicle body and trailer manufacturing	3362	614	637	6.4	639	8.4	590
Motor vehicle parts manufacturing	3363	663	619	34.5	855	24.2	729
Aerospace product and parts manufacturing	3364	18,523	18,377	-28.7	13,318	-12.0	17,877
Ship and boat building	3366	18	20	139.0	42	-37.0	18
Miscellaneous manufacturing	339	202	215	-22.3	175	-12.1	226
<b>Non-durable goods industries</b>		<b>2,690</b>	<b>2,774</b>	<b>7.9</b>	<b>2,984</b>	<b>15.3</b>	<b>2,867</b>
<b>Durable goods industries</b>		<b>44,409</b>	<b>44,090</b>	<b>-11.0</b>	<b>38,960</b>	<b>-5.4</b>	<b>43,740</b>
<b>Manufacturing</b>		<b>47,099</b>	<b>46,864</b>	<b>-9.9</b>	<b>41,944</b>	<b>-4.3</b>	<b>46,606</b>

Table 6

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

	NAICS Code	Change from April	Seasonally adjusted						
			Current periods						
			May 2003	April 2003	March 2003	February 2003			
\$ millions									
Textile mills	313	7	229	222	224	250			
Textile product mills	314	-5	65	70	73	75			
Clothing manufacturing	315	-17	310	327	321	297			
Leather and allied product manufacturing	316	-2	26	28	30	34			
Plastics and rubber products manufacturing	326	-12	1,319	1,331	1,315	1,197			
Primary metal manufacturing	331	-23	1,753	1,776	1,685	1,701			
Fabricated metal product manufacturing	332	6	2,760	2,754	2,839	2,881			
Machinery manufacturing	333	-764	6,334	7,098	7,234	6,737			
Computer and electronic product manufacturing	334	22	3,928	3,907	4,077	4,026			
Electrical equipment, appliance and component manufacturing	335	-2	1,011	1,014	1,014	1,035			
Transportation equipment manufacturing	336	-553	19,864	20,417	20,953	21,617			
Motor vehicle manufacturing	3361	-53	759	812	861	912			
Motor vehicle body and trailer manufacturing	3362	38	602	564	583	609			
Motor vehicle parts manufacturing	3363	-9	861	870	865	867			
Aerospace product and parts manufacturing	3364	-426	12,733	13,158	13,684	14,104			
Ship and boat building	3366	-5	53	58	34	37			
Miscellaneous manufacturing	339	7	166	159	170	182			
<b>Non-durable goods industries</b>		<b>-90</b>	<b>2,958</b>	<b>3,049</b>	<b>3,002</b>	<b>2,972</b>			
<b>Durable goods industries</b>		<b>-1,351</b>	<b>37,571</b>	<b>38,922</b>	<b>39,714</b>	<b>39,834</b>			
<b>Manufacturing</b>		<b>-1,441</b>	<b>40,529</b>	<b>41,971</b>	<b>42,716</b>	<b>42,807</b>			
			Change from previous month		Trend change from previous month				
			May 2003	April 2003	March 2003	May 2003	April 2003	March 2003	February 2003
percentage									
Textile mills	313	3.0	-0.7	-10.3	-3.6	-4.2	-4.4	-4.0	
Textile product mills	314	-6.9	-3.7	-3.2	-2.1	-1.0	0.4	2.0	
Clothing manufacturing	315	-5.2	1.9	8.3	0.5	0.7	0.8	0.8	
Leather and allied product manufacturing	316	-7.6	-6.8	-12.3	-4.1	-4.5	-4.1	-2.8	
Plastics and rubber products manufacturing	326	-0.9	1.2	9.9	0.3	0.1	0.0	-0.1	
Primary metal manufacturing	331	-1.3	5.4	-1.0	-0.3	-0.6	-0.9	-1.1	
Fabricated metal product manufacturing	332	0.2	-3.0	-1.5	-0.5	-0.5	-0.4	-0.2	
Machinery manufacturing	333	-10.8	-1.9	7.4	0.4	0.6	0.7	0.8	
Computer and electronic product manufacturing	334	0.6	-4.2	1.3	-1.0	-1.2	-1.3	-1.2	
Electrical equipment, appliance and component manufacturing	335	-0.2	0.0	-2.0	-0.2	-0.2	-0.2	-0.1	
Transportation equipment manufacturing	336	-2.7	-2.6	-3.1	-2.1	-2.7	-3.3	-3.5	
Motor vehicle manufacturing	3361	-6.6	-5.7	-5.7	-3.9	-5.0	-5.6	-5.7	
Motor vehicle body and trailer manufacturing	3362	6.8	-3.3	-4.3	0.3	0.0	-0.3	-0.5	
Motor vehicle parts manufacturing	3363	-1.1	0.6	-0.2	-0.6	-0.5	-0.2	0.4	
Aerospace product and parts manufacturing	3364	-3.2	-3.8	-3.0	-2.4	-3.2	-3.8	-4.1	
Ship and boat building	3366	-8.7	69.6	-7.1	7.7	10.1	12.4	14.4	
Miscellaneous manufacturing	339	4.1	-6.3	-6.8	-3.0	-4.5	-5.6	-5.7	
<b>Non-durable goods industries</b>		<b>-3.0</b>	<b>1.6</b>	<b>1.0</b>	<b>-0.6</b>	<b>-0.5</b>	<b>-0.4</b>	<b>-0.2</b>	
<b>Durable goods industries</b>		<b>-3.5</b>	<b>-2.0</b>	<b>-0.3</b>	<b>-1.2</b>	<b>-1.6</b>	<b>-1.9</b>	<b>-2.0</b>	
<b>Manufacturing</b>		<b>-3.4</b>	<b>-1.7</b>	<b>-0.2</b>	<b>-1.1</b>	<b>-1.5</b>	<b>-1.8</b>	<b>-1.9</b>	

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

	NAICS Code	Unadjusted					
		Current periods					
		May 2003	April 2003	March 2003	February 2003		
		\$ millions					
Textile mills	313	273	250	242	233		
Textile product mills	314	201	189	193	182		
Clothing manufacturing	315	448	529	603	531		
Leather and allied product manufacturing	316	49	48	55	48		
Plastics and rubber products manufacturing	326	1,988	2,039	2,036	1,703		
Primary metal manufacturing	331	2,731	3,001	2,907	2,763		
Fabricated metal product manufacturing	332	2,372	2,215	2,272	2,104		
Machinery manufacturing	333	1,178	1,752	2,572	2,130		
Computer and electronic product manufacturing	334	1,459	1,172	1,769	1,260		
Electrical equipment, appliance and component manufacturing	335	769	738	781	690		
Transportation equipment manufacturing	336	10,223	9,494	10,217	9,535		
Motor vehicle manufacturing	3361	5,948	5,819	5,999	5,504		
Motor vehicle body and trailer manufacturing	3362	270	246	228	201		
Motor vehicle parts manufacturing	3363	2,746	2,625	2,860	2,660		
Aerospace product and parts manufacturing	3364	883	273	715	555		
Ship and boat building	3366	113	125	97	86		
Miscellaneous manufacturing	339	449	432	435	400		
<b>Non-durable goods industries</b>		<b>19,383</b>	<b>18,673</b>	<b>19,574</b>	<b>17,536</b>		
<b>Durable goods industries</b>		<b>24,154</b>	<b>23,675</b>	<b>25,888</b>	<b>23,226</b>		
<b>Manufacturing</b>		<b>43,538</b>	<b>42,347</b>	<b>45,462</b>	<b>40,762</b>		
		Previous year		Year-to-date		Annual	
		May 2002	April 2002	% Change from 2002	2003	% Change from 2001	2002
		\$ millions					
Textile mills	313	290	285	-15.3	1,236	-0.8	3,253
Textile product mills	314	228	229	-9.3	956	2.0	2,527
Clothing manufacturing	315	524	575	-7.0	2,597	-2.2	6,769
Leather and allied product manufacturing	316	57	62	-13.5	245	-10.6	770
Plastics and rubber products manufacturing	326	2,089	2,053	2.8	9,592	6.2	23,082
Primary metal manufacturing	331	2,952	2,887	2.2	14,281	10.9	32,658
Fabricated metal product manufacturing	332	2,371	2,250	-1.0	11,188	2.6	27,584
Machinery manufacturing	333	2,192	1,679	-6.4	9,358	-3.3	23,507
Computer and electronic product manufacturing	334	1,915	1,827	-20.7	7,144	-8.9	21,693
Electrical equipment, appliance and component manufacturing	335	855	804	-2.9	3,747	1.6	9,275
Transportation equipment manufacturing	336	11,209	11,992	-8.6	47,578	3.6	117,133
Motor vehicle manufacturing	3361	6,335	6,427	-2.0	28,616	6.4	65,879
Motor vehicle body and trailer manufacturing	3362	230	299	0.5	1,256	8.7	2,741
Motor vehicle parts manufacturing	3363	3,132	2,949	-3.1	13,690	11.0	33,006
Aerospace product and parts manufacturing	3364	1,119	769	-60.3	1,688	-39.5	9,017
Ship and boat building	3366	145	139	-20.8	501	24.0	1,248
Miscellaneous manufacturing	339	508	437	-1.5	2,117	8.5	5,508
<b>Non-durable goods industries</b>		<b>19,205</b>	<b>17,957</b>	<b>7.8</b>	<b>93,145</b>	<b>1.0</b>	<b>218,796</b>
<b>Durable goods industries</b>		<b>27,773</b>	<b>27,185</b>	<b>-6.5</b>	<b>118,950</b>	<b>3.2</b>	<b>297,812</b>
<b>Manufacturing</b>		<b>46,978</b>	<b>45,142</b>	<b>-0.7</b>	<b>212,095</b>	<b>2.3</b>	<b>516,608</b>

Table 7

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

	NAICS Code	Change from April	Seasonally adjusted						
			Current periods						
			May 2003	April 2003	March 2003	February 2003			
\$ millions									
Textile mills	313	13	259	246	227	232			
Textile product mills	314	2	188	186	188	200			
Clothing manufacturing	315	-45	485	529	539	536			
Leather and allied product manufacturing	316	0	54	54	53	57			
Plastics and rubber products manufacturing	326	-67	1,888	1,955	2,059	1,861			
Primary metal manufacturing	331	-211	2,621	2,832	2,785	2,815			
Fabricated metal product manufacturing	332	44	2,275	2,232	2,274	2,335			
Machinery manufacturing	333	-579	1,156	1,736	2,431	2,257			
Computer and electronic product manufacturing	334	168	1,481	1,314	1,557	1,415			
Electrical equipment, appliance and component manufacturing	335	9	750	740	728	740			
Transportation equipment manufacturing	336	-68	9,110	9,179	9,508	9,409			
Motor vehicle manufacturing	3361	20	5,448	5,428	5,589	5,324			
Motor vehicle body and trailer manufacturing	3362	69	270	200	215	194			
Motor vehicle parts manufacturing	3363	-50	2,519	2,570	2,714	2,715			
Aerospace product and parts manufacturing	3364	102	533	431	634	556			
Ship and boat building	3366	-30	79	109	81	90			
Miscellaneous manufacturing	339	-2	435	437	450	440			
<b>Non-durable goods industries</b>		<b>-235</b>	<b>18,550</b>	<b>18,785</b>	<b>19,581</b>	<b>19,269</b>			
<b>Durable goods industries</b>		<b>-817</b>	<b>22,451</b>	<b>23,268</b>	<b>24,648</b>	<b>24,315</b>			
<b>Manufacturing</b>		<b>-1,052</b>	<b>41,001</b>	<b>42,054</b>	<b>44,230</b>	<b>43,584</b>			
			Change from previous month		Trend change from previous month				
			May 2003	April 2003	March 2003	May 2003	April 2003	March 2003	February 2003
percentage									
Textile mills	313	5.4	8.4	-2.3	0.8	0.2	-0.5	-1.2	
Textile product mills	314	1.1	-0.9	-5.8	-0.8	-1.3	-1.6	-1.7	
Clothing manufacturing	315	-8.4	-1.7	0.5	-1.6	-2.0	-2.1	-1.8	
Leather and allied product manufacturing	316	-0.5	1.9	-7.2	-0.2	-1.4	-2.6	-3.4	
Plastics and rubber products manufacturing	326	-3.4	-5.0	10.6	-0.2	-0.2	-0.2	-0.3	
Primary metal manufacturing	331	-7.4	1.7	-1.0	-0.2	-0.2	-0.2	0.0	
Fabricated metal product manufacturing	332	2.0	-1.9	-2.6	-0.3	-0.4	-0.4	-0.2	
Machinery manufacturing	333	-33.4	-28.6	7.7	-0.6	-1.0	-0.9	-0.2	
Computer and electronic product manufacturing	334	12.8	-15.6	10.1	-0.5	-1.3	-2.3	-3.1	
Electrical equipment, appliance and component manufacturing	335	1.3	1.7	-1.6	0.0	-0.2	-0.3	-0.5	
Transportation equipment manufacturing	336	-0.7	-3.5	1.0	1.2	0.8	0.2	-0.5	
Motor vehicle manufacturing	3361	0.4	-2.9	5.0	0.5	0.4	0.2	-0.1	
Motor vehicle body and trailer manufacturing	3362	34.7	-7.0	11.1	0.7	0.8	0.6	0.3	
Motor vehicle parts manufacturing	3363	-2.0	-5.3	0.0	-1.5	-1.7	-1.8	-1.7	
Aerospace product and parts manufacturing	3364	23.7	-32.0	14.1	18.6	17.1	10.5	0.5	
Ship and boat building	3366	-27.6	34.2	-9.6	0.4	1.0	1.5	1.5	
Miscellaneous manufacturing	339	-0.5	-2.9	2.3	-0.7	-1.0	-1.2	-1.4	
<b>Non-durable goods industries</b>		<b>-1.3</b>	<b>-4.1</b>	<b>1.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	
<b>Durable goods industries</b>		<b>-3.5</b>	<b>-5.6</b>	<b>1.4</b>	<b>0.1</b>	<b>-0.2</b>	<b>-0.5</b>	<b>-0.7</b>	
<b>Manufacturing</b>		<b>-2.5</b>	<b>-4.9</b>	<b>1.5</b>	<b>0.1</b>	<b>-0.1</b>	<b>-0.3</b>	<b>-0.4</b>	

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

	NAICS Code	Current periods			
		May 2003	April 2003	March 2003	February 2003
\$ millions					
<b>Food manufacturing</b>	<b>311</b>				
Animal food manufacturing	3111	458	446	427	405
Starch and vegetable fat and oil manufacturing	31122	275	264	268	232
Sugar and confectionery product manufacturing	3113	326	348	333	304
Fruit and vegetable preserving and specialty food manufacturing	3114	475	472	490	442
Dairy product manufacturing	3115	977	915	879	803
Meat product manufacturing	3116	1,451	1,415	1,472	1,338
Cookie, cracker and pasta manufacturing	31182	114	116	112	112
Other food manufacturing	3119	535	522	500	428
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>				
Soft drink and ice manufacturing	31211	380	329	319	248
Breweries	31212	383	308	300	236
Wineries	31213	52	46	45	38
Distilleries	31214	69	101	96	93
Tobacco manufacturing	3122	326	288	319	287
<b>Textile mills</b>	<b>313</b>				
Fibre, yarn and thread mills	3131	34	36	39	35
Fabric mills	3132	186	172	176	150
Textile and fabric finishing and fabric coating	3133	53	50	51	48
<b>Textile product mills</b>	<b>314</b>				
Carpet and rug mills	31411	77	73	73	68
Textile bag and canvas mills	31491	29	24	24	22
<b>Clothing manufacturing</b>	<b>315</b>				
Hosiery and sock mills	31511	41	36	39	35
Other clothing knitting mills	31519	40	41	39	42
Men's and boys' cut and sew clothing manufacturing	31522	154	160	180	179
Women's and girls' cut and sew clothing manufacturing	31523	152	186	205	188
Clothing accessories and other clothing manufacturing	3159	22	19	19	17
<b>Leather and allied product manufacturing</b>	<b>316</b>				
Footwear manufacturing	3162	27	22	27	25
<b>Wood product manufacturing</b>	<b>321</b>				
Sawmills and wood preservation	3211	1,276	1,288	1,324	1,227
Veneer, plywood and engineered wood product manufacturing	3212	557	538	525	498
Other wood product manufacturing	3219	546	499	478	450
<b>Paper manufacturing</b>	<b>322</b>				
Pulp, paper and paperboard mills	3221	1,910	1,920	1,958	1,764
Paperboard container manufacturing	32221	459	449	464	418
Paper bag and coated and treated paper manufacturing	32222	179	181	192	179
Other converted paper product manufacturing	32229	150	133	130	121
<b>Printing and related support activities</b>	<b>323</b>				
Printing	32311	814	820	861	732
Support activities for printing	32312	46	44	44	40
<b>Petroleum and coal products manufacturing</b>	<b>324</b>				
Petroleum refineries	32411	2,540	2,582	3,388	3,036
<b>Chemical manufacturing</b>	<b>325</b>				
Other basic inorganic chemical manufacturing	32518	253	238	241	235
Other basic organic chemical manufacturing	32519	224	250	264	210
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	565	586	633	544
Pesticide and other agricultural chemical manufacturing	32532	72	70	73	37
Pharmaceutical and medicine manufacturing	3254	765	739	762	619
Paint and coating manufacturing	32551	181	168	169	137
Adhesive manufacturing	32552	69	61	55	50
Soap and cleaning compound manufacturing	32561	116	120	124	120
Toilet preparation manufacturing	32562	138	146	157	149
Printing ink manufacturing	32591	35	37	36	33
All other chemical product manufacturing	32599	347	349	366	349

Table 8a

## Shipments for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		May 2003	April 2003	March 2003	February 2003
		\$ millions			
<b>Plastics and rubber products manufacturing</b>	<b>326</b>				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	160	156	141	127
Polystyrene foam product manufacturing	32614	29	27	29	22
Other plastic product manufacturing	32619	896	866	765	681
Other rubber product manufacturing	32629	209	208	223	191
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>				
Clay product and refractory manufacturing	3271	65	58	53	47
Glass and glass product manufacturing	3272	225	211	198	172
Cement manufacturing	32731	140	106	80	60
Ready-mix concrete manufacturing	32732	230	161	127	94
Other concrete product manufacturing	32739	105	76	81	57
Abrasive product manufacturing	32791	37	37	40	36
All other non-metallic mineral product manufacturing	32799	122	129	109	104
<b>Primary metal manufacturing</b>	<b>331</b>				
Iron and steel mills and ferro-alloy manufacturing	3311	902	926	923	866
Iron and steel pipes and tubes manufacturing from purchased steel	33121	214	206	261	251
Foundries	3315	281	272	298	266
<b>Fabricated metal product manufacturing</b>	<b>332</b>				
Cutlery and hand tool manufacturing	3322	49	46	43	40
Plate work and fabricated structural product manufacturing	33231	309	319	327	283
Power boiler and heat exchanger manufacturing	33241	104	100	109	79
Spring and wire product manufacturing	3326	119	115	118	114
Coating, engraving, heat treating and allied activities	3328	222	234	238	220
Other fabricated metal product manufacturing	3329	263	278	261	251
<b>Machinery manufacturing</b>	<b>333</b>				
Agricultural implement manufacturing	33311	188	222	220	179
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	172	186	185	161
All other general-purpose machinery manufacturing	33399	150	150	174	108
<b>Computer and electronic product manufacturing</b>	<b>334</b>				
Computer and peripheral equipment manufacturing	3341	274	239	401	267
Communications equipment manufacturing	3342	356	383	476	398
Audio and video equipment manufacturing	3343	15	18	14	17
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>				
Lighting fixture manufacturing	33512	71	62	67	61
Small electrical appliance manufacturing	33521	22	19	21	16
Major appliance manufacturing	33522	133	133	130	122
Battery manufacturing	33591	12	12	12	11
Communication and energy wire and cable manufacturing	33592	94	95	108	88
All other electrical equipment and component manufacturing	33599	73	63	65	62
<b>Transportation equipment manufacturing</b>	<b>336</b>				
Motor vehicle manufacturing	3361	6,001	5,868	6,051	5,513
Motor vehicle parts manufacturing	3363	2,733	2,669	2,879	2,698
Aerospace product and parts manufacturing	3364	918	980	1,093	930
Railroad rolling stock manufacturing	3365	258	234	292	217
Ship and boat building	3366	113	99	100	75
<b>Furniture and related product manufacturing</b>	<b>337</b>				
Household and institutional furniture and kitchen cabinet manufacturing	3371	604	590	579	549
Office furniture (including fixtures) manufacturing	3372	371	381	424	366
<b>Miscellaneous manufacturing</b>	<b>339</b>				
Medical equipment and supplies manufacturing	3391	111	109	122	109
Other miscellaneous manufacturing	3399	334	334	340	314

Table 8a

## Shipments for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Annual	
		May 2002	April 2002	% Change from 2002	2003	% Change from 2001	2002
\$ millions							
<b>Food manufacturing</b>	<b>311</b>						
Animal food manufacturing	3111	465	459	-1.1	2,182	6.1	5,392
Starch and vegetable fat and oil manufacturing	31122	235	242	13.8	1,269	3.3	2,811
Sugar and confectionery product manufacturing	3113	313	296	11.0	1,577	1.4	3,846
Fruit and vegetable preserving and specialty food manufacturing	3114	481	480	-2.0	2,347	-1.7	5,923
Dairy product manufacturing	3115	866	821	10.2	4,397	1.2	9,887
Meat product manufacturing	3116	1,562	1,455	-3.1	7,056	-6.6	17,674
Cookie, cracker and pasta manufacturing	31182	112	110	-4.6	556	-7.7	1,425
Other food manufacturing	3119	500	457	8.7	2,409	11.9	5,723
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>						
Soft drink and ice manufacturing	31211	338	285	12.2	1,504	5.2	3,688
Breweries	31212	376	319	-2.1	1,454	2.0	4,103
Wineries	31213	45	42	12.8	215	11.8	585
Distilleries	31214	92	90	1.8	456	9.1	1,265
Tobacco manufacturing	3122	324	324	-3.1	1,481	1.3	3,663
<b>Textile mills</b>	<b>313</b>						
Fibre, yarn and thread mills	3131	43	40	-13.2	177	-5.0	465
Fabric mills	3132	189	190	-7.2	839	-3.2	2,067
Textile and fabric finishing and fabric coating	3133	66	60	-13.5	249	-4.1	678
<b>Textile product mills</b>	<b>314</b>						
Carpet and rug mills	31411	79	78	-3.1	359	-3.6	890
Textile bag and canvas mills	31491	45	40	-36.0	118	7.2	429
<b>Clothing manufacturing</b>	<b>315</b>						
Hosiery and sock mills	31511	41	37	-4.5	192	0.4	511
Other clothing knitting mills	31519	34	30	29.3	204	0.1	519
Men's and boys' cut and sew clothing manufacturing	31522	185	203	-10.6	843	-4.9	2,360
Women's and girls' cut and sew clothing manufacturing	31523	166	203	-7.1	886	-3.7	2,221
Clothing accessories and other clothing manufacturing	3159	22	22	-2.1	94	-4.0	242
<b>Leather and allied product manufacturing</b>	<b>316</b>						
Footwear manufacturing	3162	27	28	-21.0	128	-5.8	518
<b>Wood product manufacturing</b>	<b>321</b>						
Sawmills and wood preservation	3211	1,793	1,767	-19.9	6,353	4.4	17,697
Veneer, plywood and engineered wood product manufacturing	3212	569	554	1.3	2,615	6.1	6,230
Other wood product manufacturing	3219	534	473	14.2	2,408	18.2	5,571
<b>Paper manufacturing</b>	<b>322</b>						
Pulp, paper and paperboard mills	3221	1,913	1,905	-0.2	9,455	-6.8	23,505
Paperboard container manufacturing	32221	411	393	15.4	2,218	3.4	4,914
Paper bag and coated and treated paper manufacturing	32222	202	199	-3.8	910	3.0	2,212
Other converted paper product manufacturing	32229	138	130	3.3	668	0.6	1,610
<b>Printing and related support activities</b>	<b>323</b>						
Printing	32311	836	839	0.5	3,984	-1.4	9,557
Support activities for printing	32312	42	44	4.0	212	-37.0	504
<b>Petroleum and coal products manufacturing</b>	<b>324</b>						
Petroleum refineries	32411	2,342	2,261	36.5	14,534	0.8	29,276
<b>Chemical manufacturing</b>	<b>325</b>						
Other basic inorganic chemical manufacturing	32518	234	225	12.7	1,214	6.8	2,726
Other basic organic chemical manufacturing	32519	226	232	11.3	1,179	1.8	2,521
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	578	564	9.0	2,901	0.6	6,379
Pesticide and other agricultural chemical manufacturing	32532	36	77	16.7	282	-13.4	341
Pharmaceutical and medicine manufacturing	3254	703	638	12.8	3,599	22.0	8,402
Paint and coating manufacturing	32551	190	180	-1.2	795	-1.4	1,875
Adhesive manufacturing	32552	67	60	1.2	277	12.2	624
Soap and cleaning compound manufacturing	32561	132	128	-3.7	604	-7.5	1,516
Toilet preparation manufacturing	32562	128	157	3.5	738	3.2	1,663
Printing ink manufacturing	32591	36	36	2.2	174	13.3	419
All other chemical product manufacturing	32599	366	333	7.3	1,755	2.6	4,104



Table 8a

## Shipments for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Annual	
		May 2002	April 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	185	155	4.6	711	4.2	1,758
Polystyrene foam product manufacturing	32614	32	24	1.6	127	3.8	321
Other plastic product manufacturing	32619	897	860	3.1	3,949	8.6	9,435
Other rubber product manufacturing	32629	221	219	0.0	1,025	0.0	2,409
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>						
Clay product and refractory manufacturing	3271	57	54	12.6	270	5.0	613
Glass and glass product manufacturing	3272	229	218	3.3	992	6.2	2,396
Cement manufacturing	32731	144	113	-3.0	445	5.7	1,425
Ready-mix concrete manufacturing	32732	227	174	-1.5	701	9.1	2,337
Other concrete product manufacturing	32739	115	77	8.3	374	1.3	1,127
Abrasive product manufacturing	32791	39	39	7.8	190	36.5	450
All other non-metallic mineral product manufacturing	32799	124	111	21.5	573	28.8	1,314
<b>Primary metal manufacturing</b>	<b>331</b>						
Iron and steel mills and ferro-alloy manufacturing	3311	933	889	10.3	4,654	11.3	10,368
Iron and steel pipes and tubes manufacturing from purchased steel	33121	216	198	16.9	1,195	1.4	2,529
Foundries	3315	296	282	2.5	1,397	8.7	3,161
<b>Fabricated metal product manufacturing</b>	<b>332</b>						
Cutlery and hand tool manufacturing	3322	41	42	17.2	225	6.3	467
Plate work and fabricated structural product manufacturing	33231	397	349	-7.7	1,570	0.4	4,286
Power boiler and heat exchanger manufacturing	33241	90	91	17.2	466	7.6	1,022
Spring and wire product manufacturing	3326	136	137	-6.2	586	9.8	1,477
Coating, engraving, heat treating and allied activities	3328	234	232	4.9	1,142	20.0	2,633
Other fabricated metal product manufacturing	3329	266	264	3.6	1,288	9.5	3,005
<b>Machinery manufacturing</b>	<b>333</b>						
Agricultural implement manufacturing	33311	240	265	-13.1	959	6.1	2,323
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	233	190	-6.0	872	9.7	2,298
All other general-purpose machinery manufacturing	33399	196	167	-17.6	726	15.4	2,275
<b>Computer and electronic product manufacturing</b>	<b>334</b>						
Computer and peripheral equipment manufacturing	3341	372	427	-29.2	1,432	-16.6	4,699
Communications equipment manufacturing	3342	745	496	-33.4	2,000	-23.7	7,137
Audio and video equipment manufacturing	3343	16	17	-7.2	81	-7.2	218
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>						
Lighting fixture manufacturing	33512	80	80	-7.6	332	-3.7	877
Small electrical appliance manufacturing	33521	21	21	6.1	99	-9.3	250
Major appliance manufacturing	33522	152	142	-4.5	640	12.4	1,529
Battery manufacturing	33591	12	12	-0.6	59	-15.1	139
Communication and energy wire and cable manufacturing	33592	118	139	-27.5	471	-42.2	1,436
All other electrical equipment and component manufacturing	33599	70	63	1.5	329	-2.3	772
<b>Transportation equipment manufacturing</b>	<b>336</b>						
Motor vehicle manufacturing	3361	6,311	6,402	-0.7	28,844	5.7	65,797
Motor vehicle parts manufacturing	3363	3,088	2,970	-2.4	13,735	10.2	32,741
Aerospace product and parts manufacturing	3364	973	1,003	-2.6	5,049	-15.0	12,472
Railroad rolling stock manufacturing	3365	238	207	11.1	1,304	5.4	2,878
Ship and boat building	3366	147	137	-26.1	466	20.6	1,242
<b>Furniture and related product manufacturing</b>	<b>337</b>						
Household and institutional furniture and kitchen cabinet manufacturing	3371	633	642	-5.0	2,884	7.7	7,133
Office furniture (including fixtures) manufacturing	3372	345	333	14.6	1,914	-6.0	4,319
<b>Miscellaneous manufacturing</b>	<b>339</b>						
Medical equipment and supplies manufacturing	3391	138	124	-10.6	554	5.3	1,432
Other miscellaneous manufacturing	3399	382	318	3.9	1,622	9.7	4,095

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

	NAICS Code	Current periods			
		May 2003	April 2003	March 2003	February 2003
\$ millions					
<b>Food manufacturing</b>	<b>311</b>				
Animal food manufacturing	3111	271	279	283	274
Starch and vegetable fat and oil manufacturing	31122	167	208	216	236
Sugar and confectionery product manufacturing	3113	364	341	348	347
Fruit and vegetable preserving and specialty food manufacturing	3114	856	849	874	890
Dairy product manufacturing	3115	783	790	809	783
Meat product manufacturing	3116	781	847	874	861
Cookie, cracker and pasta manufacturing	31182	128	129	123	124
Other food manufacturing	3119	489	471	470	473
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>				
Soft drink and ice manufacturing	31211	282	264	252	239
Breweries	31212	183	174	166	163
Wineries	31213	214	217	224	227
Distilleries	31214	456	460	504	502
Tobacco manufacturing	3122	627	636	625	635
<b>Textile mills</b>	<b>313</b>				
Fibre, yarn and thread mills	3131	57	55	56	55
Fabric mills	3132	363	360	336	333
Textile and fabric finishing and fabric coating	3133	69	69	70	71
<b>Textile product mills</b>	<b>314</b>				
Carpet and rug mills	31411	84	87	88	83
Textile bag and canvas mills	31491	49	50	51	50
<b>Clothing manufacturing</b>	<b>315</b>				
Hosiery and sock mills	31511	154	154	145	139
Other clothing knitting mills	31519	125	120	111	105
Men's and boys' cut and sew clothing manufacturing	31522	444	421	419	391
Women's and girls' cut and sew clothing manufacturing	31523	328	313	314	345
Clothing accessories and other clothing manufacturing	3159	78	75	68	68
<b>Leather and allied product manufacturing</b>	<b>316</b>				
Footwear manufacturing	3162	96	88	80	79
<b>Wood product manufacturing</b>	<b>321</b>				
Sawmills and wood preservation	3211	2,985	3,368	3,783	3,517
Veneer, plywood and engineered wood product manufacturing	3212	725	770	816	765
Other wood product manufacturing	3219	894	885	904	890
<b>Paper manufacturing</b>	<b>322</b>				
Pulp, paper and paperboard mills	3221	2,518	2,546	2,552	2,529
Paperboard container manufacturing	32221	577	576	540	542
Paper bag and coated and treated paper manufacturing	32222	271	279	282	270
Other converted paper product manufacturing	32229	155	154	154	148
<b>Printing and related support activities</b>	<b>323</b>				
Printing	32311	687	701	702	659
Support activities for printing	32312	9	8	10	11
<b>Petroleum and coal products manufacturing</b>	<b>324</b>				
Petroleum refineries	32411	1,293	1,449	1,403	1,321
<b>Chemical manufacturing</b>	<b>325</b>				
Other basic inorganic chemical manufacturing	32518	195	193	181	177
Other basic organic chemical manufacturing	32519	171	168	166	160
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	633	623	573	541
Pesticide and other agricultural chemical manufacturing	32532	111	135	132	118
Pharmaceutical and medicine manufacturing	3254	3,222	3,171	3,198	3,134
Paint and coating manufacturing	32551	265	271	263	254
Adhesive manufacturing	32552	88	91	90	85
Soap and cleaning compound manufacturing	32561	111	104	106	106
Toilet preparation manufacturing	32562	192	191	188	184
Printing ink manufacturing	32591	51	49	47	52
All other chemical product manufacturing	32599	316	318	326	323

Table 8b

## Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		May 2003	April 2003	March 2003	February 2003
		\$ millions			
<b>Plastics and rubber products manufacturing</b>	<b>326</b>				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	229	235	233	224
Polystyrene foam product manufacturing	32614	38	39	40	37
Other plastic product manufacturing	32619	934	918	941	904
Other rubber product manufacturing	32629	190	193	188	188
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>				
Clay product and refractory manufacturing	3271	105	96	92	89
Glass and glass product manufacturing	3272	278	280	281	275
Cement manufacturing	32731	193	201	202	200
Ready-mix concrete manufacturing	32732	99	96	96	94
Other concrete product manufacturing	32739	95	93	87	88
Abrasive product manufacturing	32791	131	133	130	137
All other non-metallic mineral product manufacturing	32799	147	147	149	146
<b>Primary metal manufacturing</b>	<b>331</b>				
Iron and steel mills and ferro-alloy manufacturing	3311	2,045	2,072	2,080	2,213
Iron and steel pipes and tubes manufacturing from purchased steel	33121	632	624	612	586
Foundries	3315	309	298	307	300
<b>Fabricated metal product manufacturing</b>	<b>332</b>				
Cutlery and hand tool manufacturing	3322	80	82	88	90
Plate work and fabricated structural product manufacturing	33231	483	475	457	449
Power boiler and heat exchanger manufacturing	33241	188	191	187	173
Spring and wire product manufacturing	3326	144	148	150	159
Coating, engraving, heat treating and allied activities	3328	154	167	165	170
Other fabricated metal product manufacturing	3329	559	567	564	554
<b>Machinery manufacturing</b>	<b>333</b>				
Agricultural implement manufacturing	33311	526	548	548	548
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	340	333	336	336
All other general-purpose machinery manufacturing	33399	366	360	376	361
<b>Computer and electronic product manufacturing</b>	<b>334</b>				
Computer and peripheral equipment manufacturing	3341	607	578	572	600
Communications equipment manufacturing	3342	2,177	2,173	2,144	2,276
Audio and video equipment manufacturing	3343	58	59	58	56
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>				
Lighting fixture manufacturing	33512	134	139	146	144
Small electrical appliance manufacturing	33521	47	49	48	47
Major appliance manufacturing	33522	192	197	190	171
Battery manufacturing	33591	59	62	61	61
Communication and energy wire and cable manufacturing	33592	291	293	279	263
All other electrical equipment and component manufacturing	33599	108	108	105	107
<b>Transportation equipment manufacturing</b>	<b>336</b>				
Motor vehicle manufacturing	3361	1,470	1,503	1,597	1,679
Motor vehicle parts manufacturing	3363	1,949	1,999	1,928	1,951
Aerospace product and parts manufacturing	3364	7,746	7,769	7,884	7,695
Railroad rolling stock manufacturing	3365	1,142	1,197	1,189	1,283
Ship and boat building	3366	120	126	130	132
<b>Furniture and related product manufacturing</b>	<b>337</b>				
Household and institutional furniture and kitchen cabinet manufacturing	3371	856	850	865	831
Office furniture (including fixtures) manufacturing	3372	428	426	433	415
<b>Miscellaneous manufacturing</b>	<b>339</b>				
Medical equipment and supplies manufacturing	3391	173	173	169	178
Other miscellaneous manufacturing	3399	900	927	928	910

Table 8b

## Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Average per month	
		May 2002	April 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
<b>Food manufacturing</b>	<b>311</b>						
Animal food manufacturing	3111	259	263	4.3	273	7.2	263
Starch and vegetable fat and oil manufacturing	31122	171	180	15.5	210	6.5	189
Sugar and confectionery product manufacturing	3113	352	344	-0.6	350	-1.3	359
Fruit and vegetable preserving and specialty food manufacturing	3114	788	788	6.6	876	7.6	868
Dairy product manufacturing	3115	790	781	5.0	786	5.3	748
Meat product manufacturing	3116	908	920	-9.8	840	-1.6	884
Cookie, cracker and pasta manufacturing	31182	110	103	11.1	126	-1.9	115
Other food manufacturing	3119	489	483	1.0	473	4.4	482
<b>Beverage and tobacco product manufacturing</b>	<b>312</b>						
Soft drink and ice manufacturing	31211	269	262	5.3	251	13.8	253
Breweries	31212	185	175	5.2	169	10.2	168
Wineries	31213	200	205	7.5	222	12.6	209
Distilleries	31214	485	473	5.9	486	12.1	484
Tobacco manufacturing	3122	630	646	-4.5	624	-6.2	602
<b>Textile mills</b>	<b>313</b>						
Fibre, yarn and thread mills	3131	60	63	-12.3	55	-22.3	58
Fabric mills	3132	377	402	-12.9	346	-7.1	368
Textile and fabric finishing and fabric coating	3133	58	59	19.7	70	-7.4	60
<b>Textile product mills</b>	<b>314</b>						
Carpet and rug mills	31411	84	80	6.0	85	-21.6	81
Textile bag and canvas mills	31491	69	70	-24.5	50	5.1	67
<b>Clothing manufacturing</b>	<b>315</b>						
Hosiery and sock mills	31511	139	137	7.0	143	-0.7	136
Other clothing knitting mills	31519	111	101	13.8	111	0.2	103
Men's and boys' cut and sew clothing manufacturing	31522	379	359	14.3	410	-19.9	369
Women's and girls' cut and sew clothing manufacturing	31523	342	346	-3.2	332	-7.8	351
Clothing accessories and other clothing manufacturing	3159	61	63	12.2	70	-14.6	64
<b>Leather and allied product manufacturing</b>	<b>316</b>						
Footwear manufacturing	3162	99	93	-2.8	84	-10.9	92
<b>Wood product manufacturing</b>	<b>321</b>						
Sawmills and wood preservation	3211	2,858	3,264	0.0	3,360	-9.8	2,996
Veneer, plywood and engineered wood product manufacturing	3212	646	686	10.7	756	-4.4	652
Other wood product manufacturing	3219	786	794	13.3	887	7.2	801
<b>Paper manufacturing</b>	<b>322</b>						
Pulp, paper and paperboard mills	3221	2,596	2,616	-3.4	2,527	-8.5	2,549
Paperboard container manufacturing	32221	516	531	4.9	549	-5.0	514
Paper bag and coated and treated paper manufacturing	32222	256	256	8.3	275	2.2	254
Other converted paper product manufacturing	32229	150	145	4.8	151	-3.8	147
<b>Printing and related support activities</b>	<b>323</b>						
Printing	32311	680	705	-3.3	675	-4.4	688
Support activities for printing	32312	12	13	-32.8	10	-42.6	14
<b>Petroleum and coal products manufacturing</b>	<b>324</b>						
Petroleum refineries	32411	1,283	1,376	-0.4	1,361	-12.4	1,322
<b>Chemical manufacturing</b>	<b>325</b>						
Other basic inorganic chemical manufacturing	32518	185	196	-7.8	184	-4.3	184
Other basic organic chemical manufacturing	32519	136	142	9.8	163	-23.8	146
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	514	537	7.5	579	-18.9	525
Pesticide and other agricultural chemical manufacturing	32532	160	178	-26.1	123	-20.3	133
Pharmaceutical and medicine manufacturing	3254	2,611	2,610	24.9	3,133	32.8	2,665
Paint and coating manufacturing	32551	255	259	0.7	259	-9.1	249
Adhesive manufacturing	32552	82	85	5.8	88	15.5	81
Soap and cleaning compound manufacturing	32561	144	145	-25.8	107	-11.8	129
Toilet preparation manufacturing	32562	144	148	24.8	189	-6.8	162
Printing ink manufacturing	32591	49	47	-1.2	50	-4.2	50
All other chemical product manufacturing	32599	312	302	5.9	320	-0.9	312

Table 8b

## Inventory owned for selected industries, unadjusted - concluded

	NAICS Code	Previous year		Year-to-date		Average per month	
		May 2002	April 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	212	227	2.0	229	-6.3	223
Polystyrene foam product manufacturing	32614	32	32	25.7	38	1.6	31
Other plastic product manufacturing	32619	847	841	11.5	921	7.8	848
Other rubber product manufacturing	32629	189	185	-0.8	190	-7.2	189
<b>Non-metallic mineral product manufacturing</b>	<b>327</b>						
Clay product and refractory manufacturing	3271	88	89	4.7	94	-12.2	89
Glass and glass product manufacturing	3272	277	285	-1.2	278	2.8	272
Cement manufacturing	32731	199	213	-4.2	200	-1.9	187
Ready-mix concrete manufacturing	32732	101	100	-7.5	96	-8.6	102
Other concrete product manufacturing	32739	86	87	5.0	89	1.3	82
Abrasive product manufacturing	32791	167	165	-8.4	134	32.0	151
All other non-metallic mineral product manufacturing	32799	143	144	8.4	147	0.9	141
<b>Primary metal manufacturing</b>	<b>331</b>						
Iron and steel mills and ferro-alloy manufacturing	3311	1,893	1,884	11.7	2,136	-1.1	2,050
Iron and steel pipes and tubes manufacturing from purchased steel	33121	524	509	20.2	608	6.7	543
Foundries	3315	293	301	2.7	300	1.0	287
<b>Fabricated metal product manufacturing</b>	<b>332</b>						
Cutlery and hand tool manufacturing	3322	82	82	6.2	86	9.3	83
Plate work and fabricated structural product manufacturing	33231	456	439	3.5	460	2.9	448
Power boiler and heat exchanger manufacturing	33241	136	144	31.6	183	27.1	148
Spring and wire product manufacturing	3326	153	145	1.0	152	-7.4	154
Coating, engraving, heat treating and allied activities	3328	146	145	10.8	165	16.4	156
Other fabricated metal product manufacturing	3329	555	554	2.4	562	3.6	548
<b>Machinery manufacturing</b>	<b>333</b>						
Agricultural implement manufacturing	33311	502	512	6.1	544	1.5	510
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	342	361	-4.8	334	6.8	345
All other general-purpose machinery manufacturing	33399	322	324	10.1	368	12.2	363
<b>Computer and electronic product manufacturing</b>	<b>334</b>						
Computer and peripheral equipment manufacturing	3341	622	611	-5.8	589	-42.7	607
Communications equipment manufacturing	3342	2,477	2,615	-17.3	2,210	-19.6	2,447
Audio and video equipment manufacturing	3343	50	45	24.9	57	-10.6	51
<b>Electrical equipment, appliance and component manufacturing</b>	<b>335</b>						
Lighting fixture manufacturing	33512	163	168	-13.6	143	-2.7	160
Small electrical appliance manufacturing	33521	42	37	25.7	48	-19.2	43
Major appliance manufacturing	33522	161	169	12.1	182	10.6	160
Battery manufacturing	33591	75	74	-15.6	61	44.2	70
Communication and energy wire and cable manufacturing	33592	295	299	-7.8	278	-42.2	291
All other electrical equipment and component manufacturing	33599	109	114	-7.7	108	-24.2	111
<b>Transportation equipment manufacturing</b>	<b>336</b>						
Motor vehicle manufacturing	3361	1,750	1,739	-8.8	1,580	2.9	1,730
Motor vehicle parts manufacturing	3363	1,761	1,714	14.1	1,952	3.9	1,762
Aerospace product and parts manufacturing	3364	7,878	7,589	0.5	7,684	0.3	7,817
Railroad rolling stock manufacturing	3365	1,293	1,273	-3.8	1,226	-14.0	1,338
Ship and boat building	3366	117	127	-26.1	129	-35.7	145
<b>Furniture and related product manufacturing</b>	<b>337</b>						
Household and institutional furniture and kitchen cabinet manufacturing	3371	772	745	15.2	844	9.7	772
Office furniture (including fixtures) manufacturing	3372	378	410	7.1	423	-11.1	398
<b>Miscellaneous manufacturing</b>	<b>339</b>						
Medical equipment and supplies manufacturing	3391	191	183	-5.0	172	-5.8	180
Other miscellaneous manufacturing	3399	845	819	10.0	918	5.4	879

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

Period covered	Unadjusted			
	Raw materials	Goods in process	Finished products	Total inventories
May 2002	26,681	15,831	19,420	61,933
June 2002	26,301	15,759	19,130	61,190
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	28,475	15,837	20,279	64,591
April 2003	27,981	15,833	20,504	64,318
May 2003	27,138	15,883	20,454	63,475
Period covered	Seasonally adjusted			
	Raw materials	Goods in process	Finished products	Total inventories
May 2002	26,985	15,593	19,078	61,657
June 2002	26,840	15,780	18,992	61,612
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	27,829	15,756	19,848	63,433
April 2003	27,798	15,848	20,071	63,717
May 2003	27,520	15,761	20,124	63,405

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

Province	Current year			
	May 2003	April 2003	March 2003	February 2003
	\$ millions			
<b>Total</b>				
Newfoundland and Labrador	208	157	151	134
Prince Edward Island	133	89	86	77
Nova Scotia	742	682	754	692
New Brunswick	1,112	1,055	1,119	968
Quebec	10,135	9,820	10,414	9,309
Ontario	24,096	23,563	24,718	22,170
Manitoba	1,041	1,012	994	912
Saskatchewan	664	647	654	567
Alberta	3,660	3,429	3,827	3,398
British Columbia	2,901	2,817	2,825	2,586
<b>311 Food manufacturing</b>				
Newfoundland and Labrador	78	37	38	37
Prince Edward Island	93	57	62	53
Nova Scotia	175	162	185	168
New Brunswick	187	103	106	97
Quebec	1,226	1,133	1,136	1,079
Ontario	2,232	2,174	2,130	1,899
Manitoba	262	253	256	234
Saskatchewan	162	167	149	138
Alberta	777	788	794	730
British Columbia	385	365	355	308
<b>312 Beverage and tobacco product manufacturing</b>				
Nova Scotia	21	19	18	15
Quebec	383	321	334	248
Ontario	572	534	534	482
Saskatchewan	6	5	5	4
British Columbia	96	84	78	64
<b>313 Textile mills</b>				
Quebec	180	167	169	149
Ontario	72	71	73	66
<b>314 Textile product mills</b>				
Quebec	80	77	80	73
Ontario	103	89	87	86
Alberta	3	3	2	2
British Columbia	9	8	9	7
<b>315 Clothing manufacturing</b>				
Quebec	269	316	338	322
Ontario	141	136	148	145
Manitoba	27	25	24	26
Saskatchewan	2	2	2	2
Alberta	7	7	7	6
British Columbia	17	20	22	23
<b>316 Leather and allied product manufacturing</b>				
Quebec	26	22	24	23
Ontario	13	12	15	12
<b>321 Wood product manufacturing</b>				
Nova Scotia	47	40	40	37
Quebec	677	667	653	607
Ontario	467	443	446	412
Manitoba	44	41	38	31
Saskatchewan	44	41	40	39
Alberta	182	178	173	167
British Columbia	771	778	810	775

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

Province	Current year			
	May 2003	April 2003	March 2003	February 2003
	\$ millions			
<b>322 Paper manufacturing</b>				
Nova Scotia	79	81	78	71
Quebec	939	934	968	888
Ontario	816	820	867	791
Alberta	127	129	134	124
British Columbia	487	443	445	387
<b>323 Printing and related support activities</b>				
Quebec	242	249	246	223
Ontario	443	453	490	400
Manitoba	40	36	33	31
Saskatchewan	9	8	11	8
Alberta	49	47	49	43
British Columbia	42	43	46	42
<b>324 Petroleum and coal products manufacturing</b>				
Quebec	556	583	770	751
Ontario	843	836	1,074	910
Alberta	689	603	839	748
British Columbia	63	63	63	63
<b>325 Chemical manufacturing</b>				
Quebec	856	758	747	656
Ontario	1,806	1,817	1,907	1,671
Manitoba	104	67	59	53
Saskatchewan	111	81	76	52
Alberta	743	582	636	572
British Columbia	119	117	105	96
<b>326 Plastics and rubber products manufacturing</b>				
Nova Scotia	92	88	84	82
Quebec	482	492	485	410
Ontario	1,243	1,228	1,174	1,080
Manitoba	49	45	41	41
Saskatchewan	10	10	10	8
Alberta	86	81	84	72
British Columbia	100	94	84	75
<b>327 Non-metallic mineral product manufacturing</b>				
Nova Scotia	17	10	8	6
Quebec	296	221	181	135
Ontario	504	450	381	330
Saskatchewan	12	6	4	3
Alberta	116	106	104	97
British Columbia	128	124	118	100
<b>331 Primary metal manufacturing</b>				
Quebec	1,048	1,103	1,097	1,037
Ontario	1,423	1,436	1,508	1,368
Alberta	66	74	104	102
<b>332 Fabricated metal product manufacturing</b>				
Newfoundland and Labrador	14	11	10	8
Prince Edward Island	1	3	2	3
Nova Scotia	21	18	18	19
New Brunswick	20	18	18	19
Quebec	442	408	420	369
Ontario	1,373	1,341	1,335	1,223
Manitoba	69	77	65	74
Saskatchewan	37	37	38	30
Alberta	256	254	275	221
British Columbia	134	133	133	126



Table 10

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

Province	Current year			
	May 2003	April 2003	March 2003	February 2003
	\$ millions			
<b>333 Machinery manufacturing</b>				
Quebec	364	342	422	347
Ontario	1,037	983	1,048	931
Manitoba	88	84	88	78
Saskatchewan	48	66	66	52
Alberta	217	233	270	214
British Columbia	146	135	143	146
<b>334 Computer and electronic product manufacturing</b>				
Quebec	436	381	518	440
Ontario	832	775	997	810
Saskatchewan	7	8	9	7
Alberta	63	74	91	72
British Columbia	67	71	67	57
<b>335 Electrical equipment, appliance and component manufacturing</b>				
Quebec	244	230	253	222
Ontario	422	411	448	388
Manitoba	12	14	12	12
Saskatchewan	12	12	13	9
Alberta	33	33	31	27
British Columbia	36	28	34	30
<b>336 Transportation equipment manufacturing</b>				
Nova Scotia	64	57	69	47
Quebec	970	1,024	1,146	957
Ontario	8,983	8,768	9,256	8,429
Manitoba	142	165	168	135
Saskatchewan	33	30	28	25
Alberta	75	82	81	67
British Columbia	100	102	100	86
<b>337 Furniture and related product manufacturing</b>				
Quebec	295	283	293	255
Ontario	566	562	581	535
Manitoba	59	60	63	60
Saskatchewan	7	6	7	6
Alberta	68	67	66	59
British Columbia	45	46	44	44
<b>339 Miscellaneous manufacturing</b>				
Newfoundland and Labrador	1	1	1	1
Quebec	126	110	134	119
Ontario	207	224	220	203
Manitoba	7	7	7	8
Saskatchewan	4	5	3	3
Alberta	34	30	27	26
British Columbia	47	47	49	43

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

	Previous year		Year-to-date		Annual	
	May 2002	April 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
<b>Total</b>						
Newfoundland and Labrador	192	154	4.0	796	1.3	2,234
Prince Edward Island	127	90	1.3	470	9.5	1,316
Nova Scotia	696	680	9.1	3,568	1.3	8,646
New Brunswick	1,196	1,043	10.5	5,282	3.1	12,632
Quebec	10,937	10,190	-1.0	49,165	0.9	122,059
Ontario	25,134	24,670	1.2	117,348	3.4	277,581
Manitoba	1,046	1,007	2.5	4,875	0.6	11,538
Saskatchewan	631	664	2.7	3,127	1.3	7,239
Alberta	3,640	3,236	11.8	17,838	-3.4	40,966
British Columbia	3,137	2,969	-1.7	13,722	0.4	34,236
<b>311 Food manufacturing</b>						
Newfoundland and Labrador	80	48	-13.3	226	10.3	891
Prince Edward Island	91	60	0.0	330	8.0	952
Nova Scotia	172	170	2.7	847	2.2	2,234
New Brunswick	269	131	-15.4	603	4.6	2,004
Quebec	1,185	1,074	3.9	5,628	1.4	13,573
Ontario	2,166	2,080	2.7	10,370	-0.1	25,085
Manitoba	257	255	2.1	1,250	4.3	3,023
Saskatchewan	156	155	6.2	768	3.3	1,825
Alberta	794	738	4.9	3,838	-1.0	9,055
British Columbia	386	339	5.5	1,739	3.4	4,270
<b>312 Beverage and tobacco product manufacturing</b>						
Nova Scotia	19	16	16.2	86	1.5	213
Quebec	371	330	0.2	1,550	5.7	4,093
Ontario	568	515	2.7	2,541	2.6	6,514
Saskatchewan	10	9	-44.2	22	-7.8	92
British Columbia	85	77	11.9	381	9.1	990
<b>313 Textile mills</b>						
Quebec	190	187	-9.7	810	-2.6	2,069
Ontario	89	85	-13.5	351	-5.3	912
<b>314 Textile product mills</b>						
Quebec	96	89	-10.3	378	-2.1	1,020
Ontario	105	103	-6.4	452	3.8	1,138
Alberta	3	2	3.2	12	-14.4	28
British Columbia	13	15	-34.9	40	4.0	153
<b>315 Clothing manufacturing</b>						
Quebec	321	334	-6.0	1,523	-7.4	3,937
Ontario	148	184	-13.8	713	6.6	2,020
Manitoba	25	24	10.9	126	13.1	376
Saskatchewan	1	1	22.3	9	-5.6	22
Alberta	8	8	-5.7	34	-6.8	89
British Columbia	19	20	1.8	105	-15.8	263
<b>316 Leather and allied product manufacturing</b>						
Quebec	29	24	-7.0	119	-18.8	430
Ontario	12	16	-29.1	65	11.9	225
<b>321 Wood product manufacturing</b>						
Nova Scotia	51	47	-7.1	202	10.1	530
Quebec	768	714	-1.1	3,199	11.9	7,637
Ontario	518	523	-7.1	2,189	7.7	5,622
Manitoba	47	42	-3.8	190	-13.5	501
Saskatchewan	37	43	21.8	199	39.0	430
Alberta	214	219	-8.6	873	2.8	2,265
British Columbia	1,099	1,051	-19.3	3,891	4.8	10,830

Table 10

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

	Previous year		Year-to-date		Annual	
	May 2002	April 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
<b>322 Paper manufacturing</b>						
Nova Scotia	52	73	12.9	374	-17.9	881
Quebec	989	948	-1.7	4,669	-2.7	11,729
Ontario	866	863	-1.5	4,121	-3.6	10,091
Alberta	115	107	6.6	638	4.0	1,553
British Columbia	377	364	16.3	2,183	-11.7	4,790
<b>323 Printing and related support activities</b>						
Quebec	254	237	3.4	1,184	-11.3	2,749
Ontario	454	483	-1.5	2,201	2.0	5,351
Manitoba	40	36	-6.2	170	-6.4	436
Saskatchewan	8	8	11.8	44	6.1	106
Alberta	51	52	-2.3	232	-5.4	574
British Columbia	55	53	-16.8	216	-10.7	608
<b>324 Petroleum and coal products manufacturing</b>						
Quebec	533	515	40.3	3,363	6.7	6,845
Ontario	827	763	28.1	4,602	-2.9	9,861
Alberta	608	538	37.6	3,592	1.0	7,491
British Columbia	65	60	2.2	317	-4.8	754
<b>325 Chemical manufacturing</b>						
Quebec	810	722	2.8	3,671	6.8	8,711
Ontario	1,821	1,717	10.4	8,999	7.8	20,076
Manitoba	79	48	33.2	345	-12.6	616
Saskatchewan	70	96	13.7	374	-10.8	562
Alberta	693	528	22.0	3,161	-6.7	6,456
British Columbia	99	85	27.7	529	7.1	1,076
<b>326 Plastics and rubber products manufacturing</b>						
Nova Scotia	106	102	-7.5	437	6.9	1,141
Quebec	490	463	6.8	2,275	10.7	5,208
Ontario	1,298	1,261	2.1	5,884	6.9	13,805
Manitoba	48	45	2.9	216	7.5	508
Saskatchewan	8	8	14.0	46	5.4	98
Alberta	95	87	1.6	395	-4.0	1,023
British Columbia	99	86	7.5	427	-3.1	1,008
<b>327 Non-metallic mineral product manufacturing</b>						
Nova Scotia	17	12	-4.3	50	1.2	162
Quebec	285	228	4.6	976	10.8	2,701
Ontario	484	438	5.7	1,999	4.9	5,264
Saskatchewan	14	7	-14.0	28	-8.2	113
Alberta	145	104	6.8	524	24.1	1,510
British Columbia	129	115	14.1	566	17.0	1,357
<b>331 Primary metal manufacturing</b>						
Quebec	1,159	1,096	0.0	5,373	7.8	12,712
Ontario	1,463	1,416	9.8	7,248	11.9	16,003
Alberta	75	60	25.7	442	-10.7	896
<b>332 Fabricated metal product manufacturing</b>						
Newfoundland and Labrador	6	8	95.1	51	-15.5	88
Prince Edward Island	2	3	19.0	11	-1.5	25
Nova Scotia	21	21	0.1	96	17.2	264
New Brunswick	25	21	-13.3	92	-5.7	268
Quebec	493	434	-3.6	2,021	1.8	5,329
Ontario	1,431	1,430	-3.7	6,526	4.7	16,165
Manitoba	65	53	32.3	351	-2.0	707
Saskatchewan	36	35	10.5	172	-6.5	416
Alberta	222	204	21.1	1,243	-2.7	2,637
British Columbia	144	140	1.5	649	2.2	1,609

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

	Previous year		Year-to-date		Annual	
	May 2002	April 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
<b>333 Machinery manufacturing</b>						
Quebec	361	390	-4.8	1,811	0.2	4,587
Ontario	1,221	1,127	-8.8	4,968	4.1	12,943
Manitoba	106	109	-14.0	412	9.4	1,042
Saskatchewan	52	75	-13.7	278	7.4	662
Alberta	214	254	-6.2	1,168	-14.5	2,872
British Columbia	127	124	19.4	696	8.7	1,594
<b>334 Computer and electronic product manufacturing</b>						
Quebec	653	452	-19.5	2,191	-18.1	6,588
Ontario	1,006	1,037	-16.7	4,207	-13.9	11,900
Saskatchewan	9	8	-0.3	39	12.7	94
Alberta	140	70	-23.2	388	-29.9	1,392
British Columbia	64	65	-1.4	316	-17.7	879
<b>335 Electrical equipment, appliance and component manufacturing</b>						
Quebec	265	256	-1.6	1,193	10.6	2,930
Ontario	445	461	-7.6	2,064	-12.2	5,210
Manitoba	21	18	-22.5	63	-14.7	183
Saskatchewan	19	23	-46.9	56	-45.0	208
Alberta	25	28	20.0	151	9.5	328
British Columbia	32	30	7.1	156	-32.9	345
<b>336 Transportation equipment manufacturing</b>						
Nova Scotia	84	69	-24.7	289	29.7	862
Quebec	1,211	1,283	-13.8	5,265	-7.0	14,134
Ontario	9,442	9,411	0.9	44,010	6.5	100,483
Manitoba	143	154	3.5	737	0.2	1,603
Saskatchewan	33	35	-2.8	145	21.7	349
Alberta	64	70	12.0	377	0.5	785
British Columbia	131	142	-16.8	478	-4.9	1,283
<b>337 Furniture and related product manufacturing</b>						
Quebec	314	287	-0.7	1,366	11.4	3,293
Ontario	537	560	3.8	2,813	-2.2	6,629
Manitoba	61	66	-4.0	297	11.3	743
Saskatchewan	9	8	-12.0	33	3.3	89
Alberta	72	70	-4.5	327	-3.9	838
British Columbia	43	40	10.7	224	14.4	525
<b>339 Miscellaneous manufacturing</b>						
Newfoundland and Labrador	2	2	-40.2	5	22.1	18
Quebec	161	128	-8.1	599	11.3	1,785
Ontario	231	198	6.6	1,026	6.8	2,284
Manitoba	9	7	-15.2	37	-11.0	107
Saskatchewan	4	4	9.4	19	-2.0	44
Alberta	36	34	-4.1	160	7.8	440
British Columbia	53	49	1.1	233	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						
						%					
May 2002	0.63	1.38	0.75	1.44	1.37						
June 2002	0.64	1.41	0.73	1.51	1.37						
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						
Décember 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	1.27	1.75						
April 2003	0.54	0.92	0.80	1.31	1.67						
May 2003	0.56	0.94	0.75	1.32	1.59						



## 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	93.24	4.82	1.95
Raw Materials	79.43	17.44	3.13
Goods in Process	82.13	10.72	7.15
Finished Products	80.93	14.75	4.32
Unfilled Orders	88.24	5.7	6.06

### 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
Position – Fonction	Area code. Ind. rég.		Y-A    M    D-J
<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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