



Monthly Survey of Manufacturing

April 2003



How to obtain more information

Specific inquiries about this product and related statistics or services should be directed to: Marketing and Dissemination Section, Manufacturing, Construction & Energy Division, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-9497, toll free: 1-866-873-8789, fax.: (613) 951-9499, e-mail: manufact@statcan.ca).

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our Web site.

National inquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Depository Services Program inquiries	1 800 700-1033
Fax line for Depository Services Program	1 800 889-9734
E-mail inquiries	infostats@statcan.ca
Web site	www.statcan.ca

Ordering and subscription information

This product, Catalogue no. 31-001-XIE, is published monthly in electronic format on the Statistics Canada Internet site at a price of CDN \$15.00 per issue and CDN \$147.00 for a one-year subscription. To obtain single issues, visit our Web site at www.statcan.ca, and select Products and Services.

This product is also available in print through a Print-on-Demand service, at a price of CDN \$49.00 per issue and CDN \$278.00 for a one-year subscription. The following additional shipping charges apply for delivery outside Canada:

	Single issue	Annual subscription
United States	CDN \$6.00	CDN \$72.00
Other countries	CDN \$10.00	CDN \$120.00

All prices exclude sales taxes.

The printed version can be ordered by

- Phone (Canada and United States) **1 800 267-6677**
- Fax (Canada and United States) **1 877 287-4369**
- E-mail **order@statcan.ca**
- Mail Statistics Canada
Dissemination Division
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario K1A 0T6
- And, in person at the Statistics Canada Regional Centre nearest you.

When notifying us of a change in your address, please provide both old and new addresses.

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the Agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1 800 263-1136.



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

Monthly Survey of Manufacturing

April 2003

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2003

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission from Licence Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

June 2003

Catalogue no. 31-001-XIE, Vol. 57, No. 4

ISSN 1496-2306

Frequency: Monthly

Ottawa

La version française de cette publication est disponible sur demande (n° 31-001-XIF au catalogue).

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

Symbols

The following symbols are used in this Statistics Canada publication:

- . not available for any reference period.
- .. not available for a specific reference period.
- ... not applicable.
- x suppressed to meet the confidentiality requirements of the Statistics Act.

Notice to users

Estimates in this publication are subject to revision to accommodate newly received information. It is advisable to always use data from the most recent issue.

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 .

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

This publication was prepared under the direction of:

- **Marcelle Dion**, Director, Manufacturing, Construction & Energy Division
- **Daniela Ravindra**, Chief, Monthly Survey of Manufacturing
- **Russell Kowaluk**, Economist, is the author of this publication.

Table of contents

	Page
Highlights	6
Products and services	10
Statistical Tables	
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
Survey Documentation	37

Highlights

Following a strong first quarter, all major manufacturing indicators took a hit in April. Widespread decreases in manufacturing activity contributed to a 3.4% decline in shipments to \$43.0 billion. Inventories continued to edge up, while manufacturers reported an eighth consecutive decline in unfilled orders. As a result, the inventory-to-shipment ratio, a barometer measuring manufacturers' abilities to clear their inventories, hit 1.49 in April from 1.43 in March, the highest level since December 2001.

Most industries tighten shipments in April

Fifteen of 21 industries, representing 68% of total shipments, pulled back production in April, underscored by the steep decline in prices of petroleum and coal products, coupled with the second drop in three months for the motor vehicle industry. Excluding the price-impacted petroleum and coal products industry and the recently volatile motor vehicle and parts industries, shipments contracted by 1.5% in April.

Decreases in the non-durable goods sector outpaced the decline reported by durable goods manufacturers. Lower shipments of petroleum products contributed to a 4.3% drop to \$18.8 billion in the non-durable goods sector, the lowest level since November. Shipments of big-ticket, durable goods declined 2.7% to \$24.2 billion in April. This follows a relatively strong first quarter.

Several extenuating circumstances affecting manufacturers

The resilience exhibited by the Canadian manufacturing sector since the start of 2002 will be put to the test in the months to come. The recent surge in the value of the Canadian dollar, coupled with the ongoing weakness of the US economy, may impact manufacturers that are highly dependent on export markets.

Additionally, the anticipation of the war in Iraq in the months leading up to April contributed to record high petroleum prices and, subsequently, to the price-inflated value of shipments for petroleum and coal products. As the war effort drew to a swift close, petroleum prices fell substantially, lessening the impact of the price-effect on manufacturing overall.

Although the outbreak of the SARS (Severe Acute Respiratory Syndrome) virus in Toronto posed a significant blow to the health care and hospitality sectors, the impact on Canadian manufacturing seems to have been negligible to date.

Ontario leads provinces with lower shipments

Seven provinces, led by Ontario, reported lower shipments in April. Decreases in motor vehicle and parts manufacturing, as well as in petroleum, contributed to a decline of almost \$1 billion (-4.0%) in Ontario's shipments.

Shipments by province and territory

	March 2003	April 2003	March to April 2003
Seasonally adjusted			
	\$ millions		% change
Newfoundland and Labrador	182	185	1.4
Prince Edward Island	108	107	-0.3
Nova Scotia	777	730	-6.0
New Brunswick	1,194	1,092	-8.6
Quebec	10,206	10,078	-1.3
Ontario	23,740	22,799	-4.0
Manitoba	982	995	1.3
Saskatchewan	615	623	1.2
Alberta	3,875	3,567	-7.9
British Columbia	2,808	2,792	-0.6
Yukon, Northwest Territories and Nunavut	6	6	3.3

Petroleum and chemical products manufacturing contributed to a \$308 million (-7.9%) drop in Alberta's shipments in April. Shipments were \$3.6 billion, the lowest since October 2002. Manufacturers in Quebec posted a \$128 million (-1.3%) decline, which was concentrated in the petroleum and coal products industry.

Manufacturing employment unchanged in May

Manufacturing employment was largely unchanged in May, according to the latest results of the Labour Force Survey. Employment edged down 0.1% in May, following declines in April (-0.3%) and March (-1.6%). Although May's level remained intact, manufacturing employment has been on a downward trend since August 2002 with 65,000 (-2.7%) fewer employees on the payrolls.

US manufacturing also hit in April

Manufacturing activity in the United States fell 2.2% in April, the largest percent decline in 14 months. April's decrease wiped out all the gains reported in March (+1.6%).

Similar to the situation in Canada, much of April's drop in the US was concentrated in nondurable goods industries. A 19.3% drop in shipments of petroleum and coal products contributed to a 3.5% fall in the nondurable goods sector. Manufacturers of durable goods reported a 0.9% decline in April, as a result of lower shipment activity in the transportation equipment sector.

The petroleum industry leads widespread declines

Shipments of petroleum and coal products fell sharply in April, plunging 19.2% to \$2.9 billion, the lowest level since November.

In the months prior to the war in Iraq, global apprehension regarding the safeguarding of adequate supplies of oil and gas contributed to a record run-up in petroleum prices. But following the war and the return of Venezuelan production, petroleum and coal product prices declined 9.7% in April, contributing to a significant decrease in the value of shipments.

In addition to price effects, some manufacturers noted that their plants were temporarily closed for annual maintenance in April. Others reported a general decline in demand for petroleum products during the month, all factors contributing to the sharp drop in April's shipments.

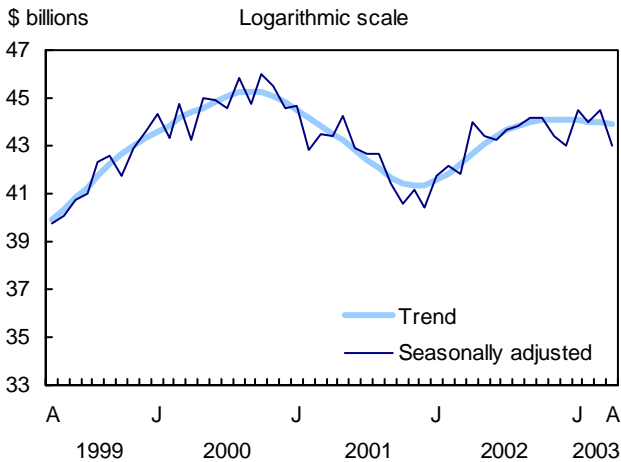
Motor vehicle and parts manufacturing weaken

In April, manufacturers of motor vehicles and parts put the brakes on new shipments. Manufacturing of motor vehicle parts fell 6.8% to \$2.5 billion, the third decline in a row. Slowing demand for motor vehicles in the United States and a backlog of inventories have contributed to the recent slowdown in shipments.

Motor vehicle manufacturing decreased 2.7% to \$5.5 billion in April, losing half the ground gained in March (+5.9%). Ongoing uncertainty regarding the state of the US economy, lower retail sales of motor vehicles, and the sheer volume of new automobiles currently on the road, contributed to April's decline in shipments and the volatility of recent months. Despite the drop in April, motor vehicle shipments in the first four months of 2003 are up 0.5% from the same period in 2002.

The chemical and machinery industries also reported lower shipments in April. Chemical manufacturing fell 3.5% to \$3.3 billion, partly because of lower industrial prices of chemicals and petroleum. Meanwhile, shipments of machinery decreased 4.3% to \$1.9 billion.

Widespread decreases pull down shipments in April



Inventories rise for the third month in a row

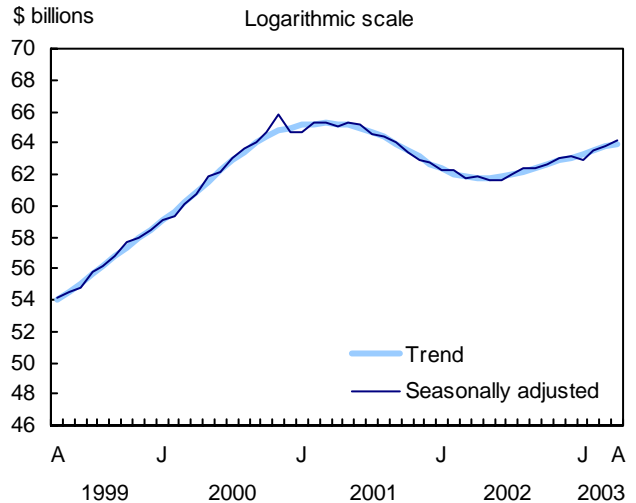
Finished-product inventories, which have been trending up since August 2002, contributed to a 0.6% rise in total inventories in April. Manufacturers' inventories hit \$64.1 billion, the highest level since August 2001, when economies were affected by the high-tech crash and general economic malaise.

Inventories have been on a gradual rise since the summer of 2002. As of April, inventories were up 4.0% from June 2002 (\$61.6 billion), the most recent low for inventories.

Finished-product inventories surpass \$20 billion

Finished-product inventories jumped 1.2% to \$20.1 billion in April, the third consecutive monthly increase. Finished-product inventories remain just short of June 2001's record high of \$20.2 billion. The recent accumulation of finished-product inventories may be a sign of weakening demand, partly the result of ongoing economic uncertainty of Canada's largest trading partner, the United States.

Inventories continue to accumulate



Manufacturers also boosted goods-in-process inventories by 0.7% to \$16.1 billion. Meanwhile, raw materials were largely unchanged at \$27.8 billion.

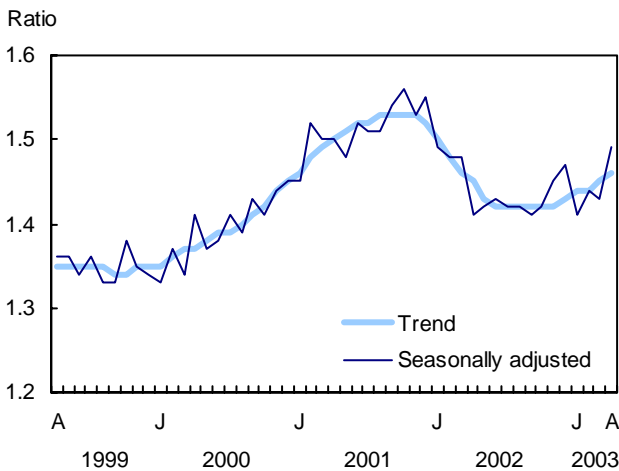
Inventory increases were widespread in April. Among the primary contributors, the petroleum and coal products industry reported inventories of \$1.7 billion, up 5.3% and the highest level since September 2001. Aerospace products and parts inventories increased 1.0% to \$8.0 billion, led by a jump in finished-product inventories. Meanwhile, uncertainty in motor vehicle manufacturing contributed to a 3.8% rise in inventories of motor vehicle parts. The industry has been on an upward trend since January 2002.

The inventory-to-shipment ratio soars in April

Rising inventories combined with a steep decline in shipments lifted the inventory-to-shipment ratio to 1.49, the highest level since December 2001 (1.55). The inventory-to-shipment ratio had remained relatively 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.

Higher finished-product inventories contributed to an increase in the finished-product inventory-to-shipment ratio from 0.45 to 0.47 in April. The ratio was at the highest level since the economic downturn of 2001. 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 climbs to a 16-month high



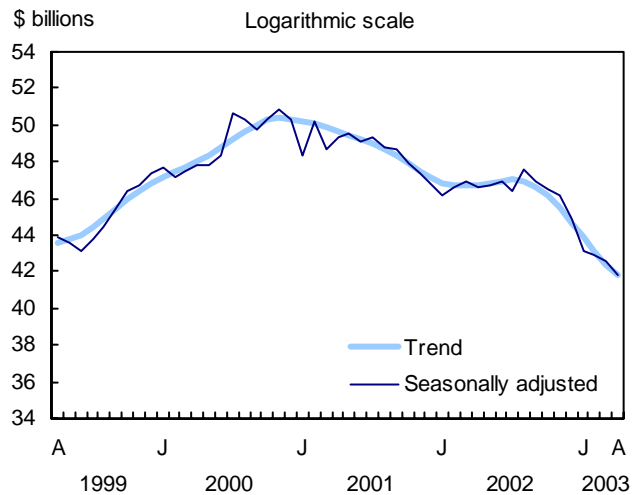
Unfilled orders decline for the eighth straight month

Unfilled orders, which fell 1.9% to \$41.8 billion in April, have been declining since summer 2002, confirming manufacturers' concerns reported in April's Business Conditions Survey. In April, 26% of manufacturers indicated that their level of unfilled orders was lower than normal. The heightened uncertainty concerning orders was evident in the transportation equipment, computer and electronic products and primary metals industries.

Ongoing instability among the world's airlines contributed to further declines in unfilled orders for the aerospace products and parts industry. Orders fell back 3.7% to \$13.2 billion, the 19th consecutive decrease for the aerospace industry.

Also reporting fewer unfilled orders in April were the computer and electronic products industry (-3.6%), machinery (-1.7%) and fabricated metal products (-4.0%).

Unfilled orders continue to decline



New orders decline in April

Following three consecutive increases, manufacturers reported fewer new orders in April. Declines were widespread, as new orders fell back 4.5% to \$42.2 billion, the lowest level since December 2002. Fewer orders for machinery, computers and motor vehicle parts contributed to April's drop.

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.

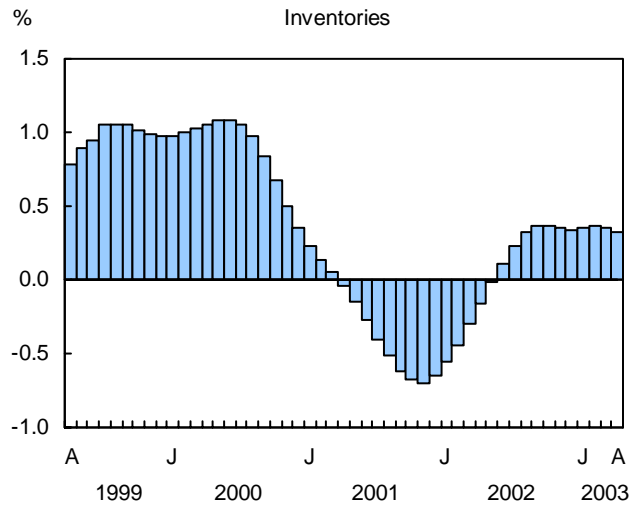
Durable goods industries include clothing, wood products, non-metallic mineral products, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment, appliance and components, transportation equipment, furniture and related products and miscellaneous manufacturing.

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

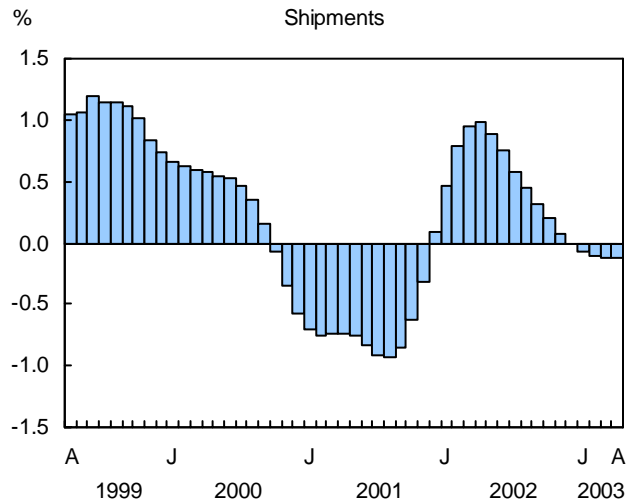
New orders are those received whether shipped in the current month or not. They are measured as the sum of shipments for the current month plus the change in unfilled orders. Some people interpret new orders as orders that will lead to future demand. This is inappropriate since the "new orders" variable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

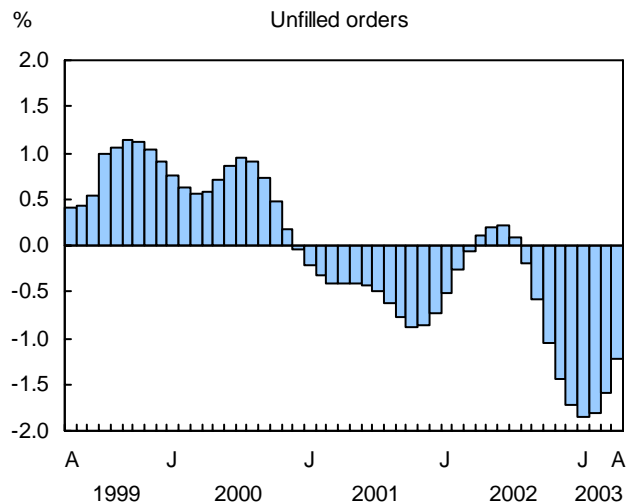
Monthly change in trend



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

Special Requests (\$)

You may obtain custom tabulations on a cost recoverable basis by contacting the Marketing and Dissemination Section. This service enables you to specify tables and time series to meet your own requirements on an ad hoc or regular basis.

Schedule of releases

Reference period
November 2002
December 2002
January 2003
February 2003
March 2003
April 2003
May 2003
June 2003
July 2003
August 2003
September 2003
October 2003
November 2003
December 2003

Monthly Survey of Manufacturing

Release date
January 22, 2003
February 18, 2003
March 18, 2003
April 16, 2003
May 15, 2003
June 13, 2003
July 16, 2003
August 14, 2003
September 16, 2003
October 15, 2003
November 14, 2003
December 16, 2003
January 21, 2004
February 13, 2004

Using the above release dates as a reference, you may view the corresponding highlights (free) from the Daily www.statcan.ca/english/dai-quo/. Just click on "Previous Issues" on the side menu bar and select the release date of your choice.

To view the MSM survey questionnaire www.statcan.ca/english/sdds/2101.htm

For further information concerning our products and services, contact us at:

Marketing and Dissemination Section
Manufacturing, Construction and Energy Division
Statistics Canada
Telephone: (613) 951-9497
Toll free: 1-866-873-8789
Fax.: (613) 951-9499
E-mail: manufact@statcan.ca

Table 1

All manufacturing industries

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
April 2002	44,708	62,485	46,864	45,142	43,982	61,861	46,641	43,693		
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	40,837	64,170	42,665	40,859	43,991	63,490	42,903	43,771		
March 2003	45,592	64,860	42,331	45,257	44,494	63,730	42,588	44,180		
April 2003	43,472	64,690	41,287	42,428	42,975	64,101	41,798	42,185		
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	
April 2002	5.2	1.0	0.2	-0.2	1.41	1.45	-0.6	0.1	3.7	1.2
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	0.2	1.42	1.42	-1.1	0.1	-0.6	0.4
August 2002	0.5	0.4	0.7	0.3	1.42	1.42	2.4	-0.2	4.2	0.1
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	0.1	0.7	0.4	1.45	1.42	-0.8	-1.4	-1.5	-0.3
December 2002	-0.9	0.0	0.3	0.3	1.47	1.43	-2.8	-1.7	-3.1	-0.3
January 2003	3.5	-0.1	-0.4	0.4	1.41	1.44	-3.8	-1.8	2.7	-0.2
February 2003	-1.2	-0.1	0.9	0.4	1.44	1.44	-0.5	-1.8	2.2	0.0
March 2003	1.1	-0.1	0.4	0.3	1.43	1.45	-0.7	-1.6	0.9	0.1
April 2003	-3.4	-0.1	0.6	0.3	1.49	1.46	-1.9	-1.2	-4.5	0.3

Table 2
Motor vehicle, and parts and accessories industries

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
April 2002	9,372	3,454	1,633	9,376	8,879	3,430	1,672	8,919		
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	8,082	3,581	1,782	8,047		
March 2003	8,914	3,522	1,715	8,843	8,373	3,491	1,728	8,319		
April 2003	8,538	3,501	1,622	8,444	8,034	3,500	1,685	7,991		
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	
April 2002	13.1	1.7	2.0	0.6	0.39	0.41	2.4	2.6	13.0	1.7
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	3.1	5.9	0.3
August 2002	-2.4	-0.1	-2.3	0.5	0.41	0.41	9.2	2.7	-1.0	-0.1
September 2002	-2.8	-0.3	0.6	0.4	0.42	0.42	7.3	1.8	-3.0	-0.5
October 2002	-0.6	-0.6	-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	-1.0
December 2002	-10.7	-0.7	4.6	0.1	0.52	0.43	-4.1	-1.6	-11.3	-1.0
January 2003	13.5	-0.6	-5.3	0.0	0.43	0.43	-2.0	-2.3	14.2	-0.8
February 2003	-1.9	-0.4	0.8	-0.2	0.44	0.43	-1.9	-2.6	-1.9	-0.5
March 2003	3.6	-0.3	-2.5	-0.2	0.42	0.43	-3.0	-2.5	3.4	-0.2
April 2003	-4.0	-0.2	0.3	-0.1	0.44	0.43	-2.5	-2.1	-4.0	-0.1

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										
April 2002	35,336	59,031	45,231	35,766	35,103	58,431	44,970	34,774		
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	32,626	60,540	40,878	32,695	35,909	59,910	41,121	35,724		
March 2003	36,678	61,338	40,615	36,415	36,121	60,239	40,860	35,860		
April 2003	34,935	61,188	39,665	33,984	34,941	60,600	40,114	34,194		
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	
April 2002	3.4	0.8	0.1	-0.2	1.66	1.69	-0.7	0.0	1.5	1.0
May 2002	-0.1	0.8	-0.4	-0.1	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	0.6	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	1.66	-1.6	-0.7	-3.2	0.0
October 2002	0.1	0.4	0.5	0.4	1.65	1.66	-0.9	-1.1	1.1	-0.2
November 2002	-1.6	0.3	0.5	0.4	1.68	1.66	-0.8	-1.5	-1.4	-0.2
December 2002	1.4	0.2	0.0	0.4	1.66	1.66	-2.8	-1.7	-1.2	-0.1
January 2003	1.5	0.1	-0.1	0.4	1.64	1.67	-3.9	-1.8	0.3	0.0
February 2003	-1.0	0.0	0.9	0.4	1.67	1.67	-0.4	-1.8	3.2	0.1
March 2003	0.6	-0.1	0.6	0.4	1.67	1.68	-0.6	-1.6	0.4	0.2
April 2003	-3.3	-0.1	0.6	0.3	1.73	1.69	-1.8	-1.2	-4.6	0.3

Table 4
Shipments by major group and selected industries

	NAICS Code	Unadjusted					
		Current periods					
		April 2003	March 2003	February 2003	January 2003		
		\$ millions					
Food manufacturing	311	5,222	5,216	4,740	4,828		
Beverage and tobacco product manufacturing	312	1,075	1,078	902	846		
Textile mills	313	255	266	233	235		
Textile product mills	314	192	193	182	177		
Clothing manufacturing	315	505	546	533	482		
Leather and allied product manufacturing	316	43	49	45	46		
Wood product manufacturing	321	2,327	2,329	2,175	2,169		
Paper manufacturing	322	2,725	2,783	2,518	2,681		
Printing and related support activities	323	864	905	773	794		
Petroleum and coal products manufacturing	324	2,776	3,581	3,214	3,175		
Chemical manufacturing	325	3,447	3,547	3,116	3,306		
Plastics and rubber products manufacturing	326	2,063	1,978	1,782	1,861		
Non-metallic mineral product manufacturing	327	958	832	699	712		
Primary metal manufacturing	331	2,805	2,929	2,728	2,956		
Fabricated metal product manufacturing	332	2,313	2,324	2,100	2,140		
Machinery manufacturing	333	1,914	2,129	1,820	1,814		
Computer and electronic product manufacturing	334	1,300	1,724	1,425	1,395		
Electrical equipment, appliance and component manufacturing	335	737	801	698	730		
Transportation equipment manufacturing	336	10,460	10,851	9,762	10,131		
Motor vehicle manufacturing	3361	5,879	6,051	5,513	5,411		
Motor vehicle body and trailer manufacturing	3362	255	259	202	224		
Motor vehicle parts manufacturing	3363	2,659	2,863	2,698	2,755		
Aerospace product and parts manufacturing	3364	1,189	1,093	930	1,128		
Railroad rolling stock manufacturing	3365	234	292	217	303		
Ship and boat building	3366	98	100	75	79		
Furniture and related product manufacturing	337	1,042	1,066	970	1,000		
Miscellaneous manufacturing	339	450	464	422	402		
Non-durable goods industries		18,662	19,596	17,505	17,947		
Durable goods industries		24,811	25,996	23,333	23,932		
Manufacturing		43,472	45,592	40,837	41,879		
		Previous year		Year-to-date		Annual	
		April 2002	March 2002	% Change from 2002	2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	5,050	4,982	3.4	20,005	1.1	62,911
Beverage and tobacco product manufacturing	312	1,061	1,055	2.2	3,901	3.7	13,304
Textile mills	313	290	281	-9.9	989	-3.7	3,210
Textile product mills	314	224	212	-8.6	744	0.5	2,520
Clothing manufacturing	315	576	588	-6.3	2,067	-3.0	6,785
Leather and allied product manufacturing	316	50	62	-15.8	183	-9.9	777
Wood product manufacturing	321	2,794	2,559	-7.5	8,999	7.2	29,498
Paper manufacturing	322	2,667	2,673	2.2	10,706	-4.4	32,726
Printing and related support activities	323	883	871	1.4	3,335	-4.1	10,061
Petroleum and coal products manufacturing	324	2,462	2,434	41.4	12,746	1.1	32,350
Chemical manufacturing	325	3,222	3,014	13.5	13,416	4.0	37,769
Plastics and rubber products manufacturing	326	2,072	1,863	5.0	7,684	6.7	23,002
Non-metallic mineral product manufacturing	327	941	728	9.0	3,202	9.7	11,586
Primary metal manufacturing	331	2,786	2,678	9.0	11,419	8.8	32,216
Fabricated metal product manufacturing	332	2,350	2,226	1.4	8,878	2.8	27,510
Machinery manufacturing	333	2,110	2,108	-4.2	7,678	1.3	24,113
Computer and electronic product manufacturing	334	1,670	2,104	-15.3	5,845	-16.5	21,255
Electrical equipment, appliance and component manufacturing	335	825	815	-5.5	2,965	-7.6	9,335
Transportation equipment manufacturing	336	11,186	10,384	0.8	41,204	4.6	119,746
Motor vehicle manufacturing	3361	6,402	5,737	0.5	22,853	5.7	65,797
Motor vehicle body and trailer manufacturing	3362	261	238	2.1	940	8.5	2,704
Motor vehicle parts manufacturing	3363	2,970	2,835	-0.1	10,975	10.2	32,741
Aerospace product and parts manufacturing	3364	1,003	1,135	3.1	4,339	-15.0	12,472
Railroad rolling stock manufacturing	3365	207	255	11.8	1,046	5.4	2,878
Ship and boat building	3366	137	105	-27.2	352	20.6	1,242
Furniture and related product manufacturing	337	1,045	1,054	2.1	4,077	2.4	12,303
Miscellaneous manufacturing	339	442	420	4.7	1,738	8.5	5,527
Non-durable goods industries		17,982	17,448	9.7	73,709	1.1	218,631
Durable goods industries		26,726	25,663	-0.6	98,071	2.5	299,874
Manufacturing		44,708	43,111	3.5	171,780	1.9	518,505

Table 4

Shipments by major group and selected industries - concluded

	NAICS Code	Change from March	Seasonally adjusted						
			Current periods						
			April 2003	March 2003	February 2003	January 2003			
			\$ millions						
Food manufacturing	311	0	5,372	5,372	5,366	5,367			
Beverage and tobacco product manufacturing	312	-16	1,116	1,131	1,112	1,130			
Textile mills	313	-7	244	252	246	253			
Textile product mills	314	-2	189	191	199	200			
Clothing manufacturing	315	6	522	516	532	564			
Leather and allied product manufacturing	316	-1	56	57	57	60			
Wood product manufacturing	321	-58	2,206	2,263	2,363	2,385			
Paper manufacturing	322	3	2,745	2,742	2,671	2,728			
Printing and related support activities	323	-19	837	856	849	854			
Petroleum and coal products manufacturing	324	-697	2,937	3,634	3,440	3,263			
Chemical manufacturing	325	-121	3,309	3,430	3,399	3,412			
Plastics and rubber products manufacturing	326	9	1,951	1,942	1,956	2,026			
Non-metallic mineral product manufacturing	327	-26	1,005	1,031	1,018	1,036			
Primary metal manufacturing	331	-73	2,726	2,798	2,861	2,924			
Fabricated metal product manufacturing	332	7	2,337	2,330	2,335	2,343			
Machinery manufacturing	333	-86	1,892	1,978	1,943	1,942			
Computer and electronic product manufacturing	334	-71	1,445	1,516	1,583	1,630			
Electrical equipment, appliance and component manufacturing	335	-8	739	747	746	782			
Transportation equipment manufacturing	336	-356	9,859	10,215	9,813	10,087			
Motor vehicle manufacturing	3361	-153	5,488	5,641	5,328	5,453			
Motor vehicle body and trailer manufacturing	3362	-23	219	241	222	232			
Motor vehicle parts manufacturing	3363	-185	2,547	2,732	2,753	2,783			
Aerospace product and parts manufacturing	3364	30	1,107	1,077	1,083	1,023			
Railroad rolling stock manufacturing	3365	21	268	248	220	271			
Ship and boat building	3366	2	85	83	80	92			
Furniture and related product manufacturing	337	6	1,032	1,026	1,038	1,065			
Miscellaneous manufacturing	339	-10	459	468	464	471			
Non-durable goods industries		-851	18,756	19,607	19,295	19,292			
Durable goods industries		-669	24,219	24,888	24,696	25,228			
Manufacturing		-1,519	42,975	44,494	43,991	44,520			
			Change from previous month		Trend change from previous month				
			April 2003	March 2003	February 2003	April 2003	March 2003	February 2003	January 2003
			percentage						
Food manufacturing	311	0.0	0.1	0.0	0.1	0.2	0.3	0.3	
Beverage and tobacco product manufacturing	312	-1.4	1.7	-1.5	-0.1	-0.1	0.0	0.0	
Textile mills	313	-2.9	2.3	-2.8	-0.6	-0.8	-0.9	-1.0	
Textile product mills	314	-1.1	-3.9	-0.3	-0.9	-1.2	-1.4	-1.5	
Clothing manufacturing	315	1.1	-3.0	-5.8	-1.4	-1.6	-1.7	-1.3	
Leather and allied product manufacturing	316	-2.2	-0.2	-5.3	-1.3	-1.9	-2.4	-2.5	
Wood product manufacturing	321	-2.6	-4.2	-0.9	-1.6	-1.6	-1.6	-1.3	
Paper manufacturing	322	0.1	2.7	-2.1	0.2	0.0	-0.2	-0.4	
Printing and related support activities	323	-2.2	0.8	-0.7	-0.3	-0.2	0.1	0.3	
Petroleum and coal products manufacturing	324	-19.2	5.6	5.4	1.7	1.9	1.9	1.9	
Chemical manufacturing	325	-3.5	0.9	-0.4	-0.5	-0.2	0.2	0.7	
Plastics and rubber products manufacturing	326	0.5	-0.7	-3.4	0.2	0.1	0.0	-0.1	
Non-metallic mineral product manufacturing	327	-2.5	1.3	-1.7	-0.2	0.0	0.3	0.6	
Primary metal manufacturing	331	-2.6	-2.2	-2.2	0.1	0.2	0.4	0.6	
Fabricated metal product manufacturing	332	0.3	-0.2	-0.3	0.1	0.3	0.3	0.3	
Machinery manufacturing	333	-4.3	1.8	0.1	-0.6	-0.8	-0.9	-1.0	
Computer and electronic product manufacturing	334	-4.7	-4.3	-2.8	-1.7	-2.0	-2.1	-2.2	
Electrical equipment, appliance and component manufacturing	335	-1.1	0.2	-4.6	-0.4	-0.5	-0.6	-0.6	
Transportation equipment manufacturing	336	-3.5	4.1	-2.7	-0.2	-0.2	-0.3	-0.5	
Motor vehicle manufacturing	3361	-2.7	5.9	-2.3	0.4	0.3	0.0	-0.4	
Motor vehicle body and trailer manufacturing	3362	-9.3	8.5	-4.2	-0.9	-0.8	-0.7	-0.4	
Motor vehicle parts manufacturing	3363	-6.8	-0.8	-1.1	-1.3	-1.3	-1.2	-1.0	
Aerospace product and parts manufacturing	3364	2.8	-0.5	5.9	0.4	0.7	1.1	1.3	
Railroad rolling stock manufacturing	3365	8.3	12.6	-19.0	0.5	0.4	0.2	0.0	
Ship and boat building	3366	1.8	4.6	-13.6	2.0	1.8	1.0	-0.4	
Furniture and related product manufacturing	337	0.5	-1.1	-2.5	-0.3	-0.3	-0.2	0.0	
Miscellaneous manufacturing	339	-2.1	1.0	-1.5	-0.3	-0.4	-0.4	-0.3	
Non-durable goods industries		-4.3	1.6	0.0	0.3	0.3	0.4	0.4	
Durable goods industries		-2.7	0.8	-2.1	-0.4	-0.5	-0.5	-0.5	
Manufacturing		-3.4	1.1	-1.2	-0.1	-0.1	-0.1	-0.1	

Table 5
Inventories by major group and selected industries

	NAICS Code	Unadjusted					
		Current periods					
		April 2003	March 2003	February 2003	January 2003		
		\$ millions					
Food manufacturing	311	4,795	4,903	4,873	4,866		
Beverage and tobacco product manufacturing	312	1,756	1,771	1,766	1,705		
Textile mills	313	491	463	459	459		
Textile product mills	314	327	325	314	307		
Clothing manufacturing	315	1,220	1,181	1,167	1,141		
Leather and allied product manufacturing	316	133	123	124	121		
Wood product manufacturing	321	5,051	5,486	5,172	4,707		
Paper manufacturing	322	3,667	3,623	3,578	3,498		
Printing and related support activities	323	723	718	670	640		
Petroleum and coal products manufacturing	324	1,766	1,699	1,616	1,636		
Chemical manufacturing	325	6,184	6,114	5,914	5,591		
Plastics and rubber products manufacturing	326	2,236	2,219	2,155	2,148		
Non-metallic mineral product manufacturing	327	1,261	1,231	1,222	1,221		
Primary metal manufacturing	331	4,843	4,863	4,980	5,019		
Fabricated metal product manufacturing	332	3,732	3,678	3,641	3,580		
Machinery manufacturing	333	4,812	4,701	4,728	4,621		
Computer and electronic product manufacturing	334	4,326	4,257	4,426	4,416		
Electrical equipment, appliance and component manufacturing	335	1,424	1,394	1,348	1,345		
Transportation equipment manufacturing	336	13,306	13,453	13,437	13,008		
Motor vehicle manufacturing	3361	1,507	1,600	1,680	1,650		
Motor vehicle body and trailer manufacturing	3362	492	500	508	453		
Motor vehicle parts manufacturing	3363	1,994	1,922	1,950	1,934		
Aerospace product and parts manufacturing	3364	7,751	7,866	7,677	7,326		
Railroad rolling stock manufacturing	3365	1,240	1,229	1,283	1,322		
Ship and boat building	3366	127	131	132	135		
Furniture and related product manufacturing	337	1,536	1,562	1,497	1,483		
Miscellaneous manufacturing	339	1,103	1,096	1,082	1,091		
Non-durable goods industries		22,077	21,958	21,470	20,970		
Durable goods industries		42,612	42,903	42,700	41,631		
Manufacturing		64,690	64,860	64,170	62,601		
		Previous year		Year-to-date		Average per month	
		April 2002	March 2002	% Change from 2002	Average 2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	4,714	4,722	2.4	4,859	3.4	4,832
Beverage and tobacco product manufacturing	312	1,762	1,743	2.7	1,750	5.0	1,717
Textile mills	313	524	521	-10.7	468	-9.3	486
Textile product mills	314	321	323	0.2	318	-13.1	324
Clothing manufacturing	315	1,161	1,178	2.0	1,177	-12.5	1,174
Leather and allied product manufacturing	316	139	130	-2.8	125	-8.9	137
Wood product manufacturing	321	4,745	5,222	2.9	5,104	-6.3	4,449
Paper manufacturing	322	3,644	3,626	-1.1	3,592	-7.0	3,548
Printing and related support activities	323	717	734	-4.3	688	-5.7	702
Petroleum and coal products manufacturing	324	1,671	1,644	0.8	1,679	-10.6	1,614
Chemical manufacturing	325	5,365	5,258	14.0	5,951	4.0	5,277
Plastics and rubber products manufacturing	326	2,027	2,014	8.7	2,189	0.8	2,039
Non-metallic mineral product manufacturing	327	1,266	1,262	0.5	1,233	2.0	1,206
Primary metal manufacturing	331	4,474	4,452	9.6	4,926	0.4	4,657
Fabricated metal product manufacturing	332	3,486	3,465	6.1	3,658	2.1	3,492
Machinery manufacturing	333	4,682	4,645	0.8	4,716	1.2	4,609
Computer and electronic product manufacturing	334	4,855	4,819	-13.2	4,356	-22.5	4,654
Electrical equipment, appliance and component manufacturing	335	1,406	1,412	-1.4	1,377	-16.3	1,384
Transportation equipment manufacturing	336	13,101	13,219	1.5	13,301	-1.3	13,441
Motor vehicle manufacturing	3361	1,739	1,650	-6.8	1,609	2.9	1,730
Motor vehicle body and trailer manufacturing	3362	432	428	17.2	488	-6.3	417
Motor vehicle parts manufacturing	3363	1,714	1,689	14.8	1,950	3.9	1,762
Aerospace product and parts manufacturing	3364	7,589	7,838	0.9	7,655	0.3	7,817
Railroad rolling stock manufacturing	3365	1,273	1,233	-0.1	1,268	-14.0	1,338
Ship and boat building	3366	127	129	-30.3	131	-35.7	145
Furniture and related product manufacturing	337	1,420	1,386	10.1	1,519	1.1	1,427
Miscellaneous manufacturing	339	1,003	1,028	8.2	1,093	3.3	1,059
Non-durable goods industries		20,885	20,715	4.6	21,619	-0.7	20,676
Durable goods industries		41,600	42,087	1.4	42,462	-4.7	41,553
Manufacturing		62,485	62,802	2.5	64,080	-3.4	62,229

Table 5
Inventories by major group and selected industries - concluded

	NAICS Code	Change from March	Seasonally adjusted						
			Current periods						
			April 2003	March 2003	February 2003	January 2003			
			\$ millions						
Food manufacturing	311	-79	4,893	4,972	4,949	4,895			
Beverage and tobacco product manufacturing	312	-16	1,700	1,716	1,749	1,720			
Textile mills	313	21	481	460	454	455			
Textile product mills	314	2	322	320	312	308			
Clothing manufacturing	315	28	1,219	1,191	1,200	1,185			
Leather and allied product manufacturing	316	3	132	129	136	133			
Wood product manufacturing	321	18	4,699	4,681	4,560	4,467			
Paper manufacturing	322	31	3,579	3,549	3,525	3,490			
Printing and related support activities	323	18	721	703	673	653			
Petroleum and coal products manufacturing	324	87	1,730	1,643	1,608	1,636			
Chemical manufacturing	325	30	5,933	5,902	5,788	5,568			
Plastics and rubber products manufacturing	326	10	2,182	2,171	2,131	2,144			
Non-metallic mineral product manufacturing	327	30	1,214	1,183	1,206	1,229			
Primary metal manufacturing	331	-35	4,990	5,025	5,042	4,994			
Fabricated metal product manufacturing	332	58	3,713	3,655	3,623	3,585			
Machinery manufacturing	333	65	4,779	4,714	4,692	4,650			
Computer and electronic product manufacturing	334	10	4,297	4,286	4,358	4,378			
Electrical equipment, appliance and component manufacturing	335	17	1,404	1,387	1,362	1,364			
Transportation equipment manufacturing	336	90	13,497	13,407	13,555	13,464			
Motor vehicle manufacturing	3361	-64	1,512	1,577	1,645	1,644			
Motor vehicle body and trailer manufacturing	3362	-6	463	470	488	465			
Motor vehicle parts manufacturing	3363	74	1,988	1,915	1,936	1,908			
Aerospace product and parts manufacturing	3364	81	7,968	7,887	7,851	7,773			
Railroad rolling stock manufacturing	3365	11	1,240	1,229	1,283	1,322			
Ship and boat building	3366	0	126	126	125	128			
Furniture and related product manufacturing	337	-29	1,520	1,550	1,490	1,497			
Miscellaneous manufacturing	339	10	1,096	1,086	1,076	1,114			
Non-durable goods industries		108	21,672	21,564	21,327	21,003			
Durable goods industries		263	42,429	42,166	42,164	41,926			
Manufacturing		370	64,101	63,730	63,490	62,929			
			Change from previous month		Trend change from previous month				
			April 2003	March 2003	February 2003	April 2003	March 2003	February 2003	January 2003
			percentage						
Food manufacturing	311	-1.6	0.5	1.1	-0.1	0.0	0.1	0.2	
Beverage and tobacco product manufacturing	312	-0.9	-1.9	1.7	-0.6	-0.6	-0.6	-0.5	
Textile mills	313	4.6	1.3	-0.2	0.5	0.3	0.1	-0.2	
Textile product mills	314	0.7	2.5	1.2	0.4	0.3	0.0	-0.4	
Clothing manufacturing	315	2.4	-0.7	1.2	0.4	0.5	0.5	0.5	
Leather and allied product manufacturing	316	2.5	-5.8	2.4	-0.2	-0.4	-0.5	-0.6	
Wood product manufacturing	321	0.4	2.7	2.1	0.7	0.8	0.9	0.8	
Paper manufacturing	322	0.9	0.7	1.0	0.5	0.4	0.3	0.2	
Printing and related support activities	323	2.5	4.5	3.0	1.0	1.0	0.8	0.4	
Petroleum and coal products manufacturing	324	5.3	2.1	-1.7	1.2	1.1	1.0	0.7	
Chemical manufacturing	325	0.5	2.0	3.9	1.0	1.2	1.4	1.5	
Plastics and rubber products manufacturing	326	0.5	1.9	-0.6	0.3	0.4	0.6	0.7	
Non-metallic mineral product manufacturing	327	2.6	-1.9	-1.9	0.0	0.0	-0.1	-0.1	
Primary metal manufacturing	331	-0.7	-0.3	1.0	0.4	0.6	0.7	0.9	
Fabricated metal product manufacturing	332	1.6	0.9	1.1	0.8	0.9	0.8	0.7	
Machinery manufacturing	333	1.4	0.5	0.9	0.3	0.4	0.4	0.5	
Computer and electronic product manufacturing	334	0.2	-1.6	-0.4	-0.3	-0.4	-0.5	-0.5	
Electrical equipment, appliance and component manufacturing	335	1.3	1.8	-0.2	0.6	0.5	0.4	0.2	
Transportation equipment manufacturing	336	0.7	-1.1	0.7	0.1	0.0	-0.1	-0.1	
Motor vehicle manufacturing	3361	-4.1	-4.2	0.1	-1.6	-1.9	-2.0	-1.8	
Motor vehicle body and trailer manufacturing	3362	-1.4	-3.8	4.9	0.2	0.7	1.2	1.7	
Motor vehicle parts manufacturing	3363	3.8	-1.1	1.4	1.1	1.2	1.4	1.5	
Aerospace product and parts manufacturing	3364	1.0	0.4	1.0	0.4	0.4	0.4	0.2	
Railroad rolling stock manufacturing	3365	0.9	-4.2	-2.9	-1.4	-2.0	-2.4	-2.3	
Ship and boat building	3366	0.3	0.9	-3.0	-1.1	-0.8	-0.4	0.1	
Furniture and related product manufacturing	337	-1.9	4.0	-0.4	0.2	0.4	0.5	0.6	
Miscellaneous manufacturing	339	0.9	1.0	-3.4	-0.3	-0.3	-0.4	-0.3	
Non-durable goods industries		0.5	1.1	1.5	0.5	0.5	0.6	0.6	
Durable goods industries		0.6	0.0	0.6	0.2	0.3	0.3	0.2	
Manufacturing		0.6	0.4	0.9	0.3	0.3	0.4	0.4	

Table 6
Unfilled orders by selected major group and industries

	NAICS Code	Unadjusted					
		Current periods					
		April 2003	March 2003	February 2003	January 2003		
		\$ millions					
Textile mills	313	233	242	266	265		
Textile product mills	314	72	75	74	75		
Clothing manufacturing	315	355	339	282	280		
Leather and allied product manufacturing	316	36	31	25	22		
Plastics and rubber products manufacturing	326	1,280	1,307	1,250	1,328		
Primary metal manufacturing	331	1,714	1,704	1,743	1,721		
Fabricated metal product manufacturing	332	2,733	2,845	2,883	2,870		
Machinery manufacturing	333	7,115	7,241	6,826	6,409		
Computer and electronic product manufacturing	334	3,928	4,077	4,026	4,186		
Electrical equipment, appliance and component manufacturing	335	1,011	1,014	1,035	1,043		
Transportation equipment manufacturing	336	19,876	20,581	21,333	21,557		
Motor vehicle manufacturing	3361	812	861	912	921		
Motor vehicle body and trailer manufacturing	3362	619	630	661	661		
Motor vehicle parts manufacturing	3363	810	855	874	913		
Aerospace product and parts manufacturing	3364	12,680	13,382	13,761	14,135		
Ship and boat building	3366	52	32	36	25		
Miscellaneous manufacturing	339	161	163	181	213		
Non-durable goods industries		3,030	3,015	3,031	3,000		
Durable goods industries		38,257	39,316	39,634	39,643		
Manufacturing		41,287	42,331	42,665	42,643		
		Previous year		Year-to-date		Average per month	
		April 2002	March 2002	% Change from 2002	Average 2003	% Change from 2001	2002
		\$ millions					
Textile mills	313	289	294	-10.5	251	9.3	276
Textile product mills	314	57	52	43.6	74	2.7	55
Clothing manufacturing	315	355	356	-8.2	314	-7.0	324
Leather and allied product manufacturing	316	39	28	-2.3	28	-18.2	31
Plastics and rubber products manufacturing	326	1,206	1,225	5.6	1,291	15.6	1,254
Primary metal manufacturing	331	1,905	1,805	-1.4	1,720	25.1	1,795
Fabricated metal product manufacturing	332	2,907	3,007	-3.0	2,833	0.3	2,878
Machinery manufacturing	333	6,624	7,056	0.2	6,898	4.3	6,709
Computer and electronic product manufacturing	334	3,855	3,698	10.4	4,054	-8.4	3,977
Electrical equipment, appliance and component manufacturing	335	930	951	8.6	1,026	-30.5	977
Transportation equipment manufacturing	336	26,175	25,369	-19.0	20,837	-8.7	25,566
Motor vehicle manufacturing	3361	1,014	989	-10.7	876	4.2	1,052
Motor vehicle body and trailer manufacturing	3362	637	599	7.5	643	8.4	590
Motor vehicle parts manufacturing	3363	619	640	37.3	863	24.2	729
Aerospace product and parts manufacturing	3364	18,377	18,611	-28.0	13,489	-12.0	17,877
Ship and boat building	3366	20	18	109.8	37	-37.0	18
Miscellaneous manufacturing	339	215	220	-22.1	179	-12.1	226
Non-durable goods industries		2,774	2,800	8.4	3,019	15.3	2,867
Durable goods industries		44,090	43,630	-10.1	39,212	-5.4	43,740
Manufacturing		46,864	46,430	-9.0	42,231	-4.3	46,606

Table 6

Unfilled orders by selected major group and industries - concluded

	NAICS Code	Change from March	Seasonally adjusted						
			Current periods						
			April 2003	March 2003	February 2003	January 2003			
			\$ millions						
Textile mills	313	-2	221	223	249	264			
Textile product mills	314	1	73	72	75	75			
Clothing manufacturing	315	4	324	320	297	290			
Leather and allied product manufacturing	316	-2	28	30	34	34			
Plastics and rubber products manufacturing	326	9	1,328	1,319	1,199	1,287			
Primary metal manufacturing	331	-25	1,640	1,665	1,690	1,752			
Fabricated metal product manufacturing	332	-113	2,733	2,845	2,883	2,870			
Machinery manufacturing	333	-126	7,115	7,241	6,826	6,409			
Computer and electronic product manufacturing	334	-148	3,928	4,077	4,026	4,186			
Electrical equipment, appliance and component manufacturing	335	-3	1,011	1,014	1,035	1,043			
Transportation equipment manufacturing	336	-471	20,415	20,887	21,639	21,996			
Motor vehicle manufacturing	3361	-49	812	861	912	921			
Motor vehicle body and trailer manufacturing	3362	-23	559	582	609	638			
Motor vehicle parts manufacturing	3363	5	873	868	869	896			
Aerospace product and parts manufacturing	3364	-502	13,218	13,719	14,122	14,612			
Ship and boat building	3366	17	52	35	37	27			
Miscellaneous manufacturing	339	-1	170	171	177	203			
Non-durable goods industries		54	3,059	3,005	2,973	2,972			
Durable goods industries		-844	38,739	39,583	39,930	40,152			
Manufacturing		-790	41,798	42,588	42,903	43,123			
			Change from previous month		Trend change from previous month				
			April 2003	March 2003	February 2003	April 2003	March 2003	February 2003	January 2003
			percentage						
Textile mills	313	-0.9	-10.4	-5.7	-3.9	-4.1	-3.9	-3.3	
Textile product mills	314	0.9	-3.3	-0.5	1.3	2.4	3.5	4.5	
Clothing manufacturing	315	1.4	7.7	2.6	1.5	1.5	1.3	0.7	
Leather and allied product manufacturing	316	-6.2	-12.1	0.6	-3.1	-3.2	-2.2	-0.7	
Plastics and rubber products manufacturing	326	0.7	10.0	-6.9	0.2	0.0	-0.1	-0.1	
Primary metal manufacturing	331	-1.5	-1.5	-3.5	-1.9	-2.2	-2.2	-1.8	
Fabricated metal product manufacturing	332	-4.0	-1.3	0.5	-0.8	-0.7	-0.4	-0.1	
Machinery manufacturing	333	-1.7	6.1	6.5	0.9	1.0	1.1	0.9	
Computer and electronic product manufacturing	334	-3.6	1.3	-3.8	-1.4	-1.4	-1.3	-0.9	
Electrical equipment, appliance and component manufacturing	335	-0.3	-2.0	-0.7	-0.2	-0.1	-0.1	0.1	
Transportation equipment manufacturing	336	-2.3	-3.5	-1.6	-2.2	-2.9	-3.3	-3.4	
Motor vehicle manufacturing	3361	-5.7	-5.7	-0.9	-3.8	-4.9	-5.4	-5.3	
Motor vehicle body and trailer manufacturing	3362	-4.0	-4.4	-4.6	-1.9	-1.8	-1.6	-1.3	
Motor vehicle parts manufacturing	3363	0.6	-0.2	-2.9	-0.3	0.0	0.6	1.3	
Aerospace product and parts manufacturing	3364	-3.7	-2.9	-3.4	-2.6	-3.3	-3.8	-3.9	
Ship and boat building	3366	49.1	-6.1	36.7	7.4	9.8	12.1	14.2	
Miscellaneous manufacturing	339	-0.6	-3.5	-12.9	-4.2	-5.4	-5.8	-5.2	
Non-durable goods industries		1.8	1.1	0.1	0.2	0.2	0.2	0.2	
Durable goods industries		-2.1	-0.9	-0.6	-1.3	-1.7	-2.0	-2.0	
Manufacturing		-1.9	-0.7	-0.5	-1.2	-1.6	-1.8	-1.8	

Table 7
New orders by selected major group and industries

	NAICS Code	Unadjusted					
		Current periods					
		April 2003	March 2003	February 2003	January 2003		
		\$ millions					
Textile mills	313	246	242	233	238		
Textile product mills	314	190	194	182	191		
Clothing manufacturing	315	521	604	534	486		
Leather and allied product manufacturing	316	48	55	48	45		
Plastics and rubber products manufacturing	326	2,036	2,036	1,704	1,827		
Primary metal manufacturing	331	2,815	2,889	2,751	2,879		
Fabricated metal product manufacturing	332	2,201	2,287	2,113	2,225		
Machinery manufacturing	333	1,788	2,545	2,237	1,725		
Computer and electronic product manufacturing	334	1,152	1,775	1,264	1,484		
Electrical equipment, appliance and component manufacturing	335	734	780	690	769		
Transportation equipment manufacturing	336	9,754	10,099	9,538	8,110		
Motor vehicle manufacturing	3361	5,830	5,999	5,504	5,345		
Motor vehicle body and trailer manufacturing	3362	245	228	201	311		
Motor vehicle parts manufacturing	3363	2,614	2,844	2,660	2,800		
Aerospace product and parts manufacturing	3364	487	715	555	-738		
Ship and boat building	3366	118	96	86	81		
Miscellaneous manufacturing	339	447	446	391	401		
Non-durable goods industries		18,676	19,579	17,536	17,979		
Durable goods industries		23,752	25,678	23,323	22,007		
Manufacturing		42,428	45,257	40,859	39,986		
		Previous year		Year-to-date		Annual	
		April 2002	March 2002	% Change from 2002	2003	% Change from 2001	2002
		\$ millions					
Textile mills	313	285	296	-17.9	960	-0.8	3,253
Textile product mills	314	229	215	-8.5	756	2.0	2,527
Clothing manufacturing	315	575	617	-5.5	2,145	-2.2	6,769
Leather and allied product manufacturing	316	62	67	-13.5	196	-10.6	770
Plastics and rubber products manufacturing	326	2,053	1,836	4.9	7,603	6.2	23,082
Primary metal manufacturing	331	2,887	2,752	2.8	11,334	10.9	32,658
Fabricated metal product manufacturing	332	2,250	2,254	-1.2	8,825	2.6	27,584
Machinery manufacturing	333	1,679	2,136	6.3	8,296	-3.3	23,507
Computer and electronic product manufacturing	334	1,827	2,234	-20.0	5,676	-8.9	21,693
Electrical equipment, appliance and component manufacturing	335	804	795	-1.0	2,973	1.6	9,275
Transportation equipment manufacturing	336	11,992	10,119	-8.2	37,501	3.6	117,133
Motor vehicle manufacturing	3361	6,427	5,770	-8.2	22,678	6.4	65,879
Motor vehicle body and trailer manufacturing	3362	299	251	-3.5	984	8.7	2,741
Motor vehicle parts manufacturing	3363	2,949	2,842	-0.7	10,918	11.0	33,006
Aerospace product and parts manufacturing	3364	769	912	-67.5	1,018	-39.5	9,017
Ship and boat building	3366	139	107	-21.7	382	24.0	1,248
Miscellaneous manufacturing	339	437	394	2.6	1,684	8.5	5,508
Non-durable goods industries		17,957	17,442	9.8	73,770	1.0	218,796
Durable goods industries		27,185	25,619	-4.7	94,761	3.2	297,812
Manufacturing		45,142	43,060	1.2	168,531	2.3	516,608

Table 7

New orders by selected major group and industries - concluded

	NAICS Code	Change from March	Seasonally adjusted						
			Current periods						
			April 2003	March 2003	February 2003	January 2003			
\$ millions									
Textile mills	313	17	242	226	231	240			
Textile product mills	314	1	190	189	199	208			
Clothing manufacturing	315	-13	526	539	539	549			
Leather and allied product manufacturing	316	1	54	53	57	61			
Plastics and rubber products manufacturing	326	-102	1,960	2,062	1,867	2,006			
Primary metal manufacturing	331	-72	2,701	2,773	2,799	2,768			
Fabricated metal product manufacturing	332	-68	2,224	2,292	2,349	2,428			
Machinery manufacturing	333	-628	1,766	2,393	2,360	1,853			
Computer and electronic product manufacturing	334	-270	1,297	1,566	1,423	1,719			
Electrical equipment, appliance and component manufacturing	335	10	736	726	738	821			
Transportation equipment manufacturing	336	-75	9,388	9,463	9,456	8,423			
Motor vehicle manufacturing	3361	-150	5,439	5,589	5,320	5,387			
Motor vehicle body and trailer manufacturing	3362	-19	195	214	193	282			
Motor vehicle parts manufacturing	3363	-179	2,552	2,730	2,727	2,812			
Aerospace product and parts manufacturing	3364	-69	605	674	593	433			
Ship and boat building	3366	21	102	81	90	95			
Miscellaneous manufacturing	339	-4	458	462	438	457			
Non-durable goods industries		-828	18,810	19,638	19,297	19,316			
Durable goods industries		-1,167	23,375	24,542	24,474	23,507			
Manufacturing		-1,995	42,185	44,180	43,771	42,823			
			Change from previous month		Trend change from previous month				
			April 2003	March 2003	February 2003	April 2003	March 2003	February 2003	January 2003
percentage									
Textile mills	313	7.4	-2.2	-3.9	-0.3	-0.9	-1.5	-1.9	
Textile product mills	314	0.5	-5.0	-4.3	-1.3	-1.6	-1.6	-1.6	
Clothing manufacturing	315	-2.3	-0.1	-1.8	-1.3	-1.5	-1.4	-0.9	
Leather and allied product manufacturing	316	1.9	-7.7	-6.0	-1.2	-2.5	-3.2	-3.4	
Plastics and rubber products manufacturing	326	-5.0	10.5	-6.9	0.3	0.2	0.0	-0.2	
Primary metal manufacturing	331	-2.6	-0.9	1.1	0.3	0.2	0.2	0.3	
Fabricated metal product manufacturing	332	-3.0	-2.4	-3.3	0.0	-0.1	0.1	0.3	
Machinery manufacturing	333	-26.2	1.4	27.4	-0.9	-0.8	-0.3	0.5	
Computer and electronic product manufacturing	334	-17.2	10.1	-17.2	-1.6	-2.5	-3.2	-3.6	
Electrical equipment, appliance and component manufacturing	335	1.4	-1.6	-10.1	-0.4	-0.6	-0.8	-0.9	
Transportation equipment manufacturing	336	-0.8	0.1	12.3	1.6	1.1	0.2	-0.8	
Motor vehicle manufacturing	3361	-2.7	5.1	-1.3	0.6	0.4	0.0	-0.5	
Motor vehicle body and trailer manufacturing	3362	-8.7	10.9	-31.6	-0.9	-1.3	-1.5	-1.3	
Motor vehicle parts manufacturing	3363	-6.5	0.1	-3.0	-1.4	-1.5	-1.5	-1.3	
Aerospace product and parts manufacturing	3364	-10.3	13.7	37.0	19.7	17.8	9.9	0.1	
Ship and boat building	3366	25.8	-9.6	-5.5	1.2	1.3	0.8	-0.1	
Miscellaneous manufacturing	339	-1.0	5.6	-4.2	0.3	0.0	-0.5	-0.9	
Non-durable goods industries		-4.2	1.8	-0.1	0.3	0.3	0.4	0.4	
Durable goods industries		-4.8	0.3	4.1	0.3	0.0	-0.4	-0.7	
Manufacturing		-4.5	0.9	2.2	0.3	0.1	0.0	-0.2	

Table 8a
Shipments for selected industries, unadjusted

	NAICS Code	Current periods			
		April 2003	March 2003	February 2003	January 2003
\$ millions					
Food manufacturing	311				
Animal food manufacturing	3111	444	429	402	446
Starch and vegetable fat and oil manufacturing	31122	264	268	232	231
Sugar and confectionery product manufacturing	3113	350	334	304	266
Fruit and vegetable preserving and specialty food manufacturing	3114	473	490	442	468
Dairy product manufacturing	3115	910	879	803	822
Meat product manufacturing	3116	1,405	1,471	1,338	1,381
Cookie, cracker and pasta manufacturing	31182	119	112	112	102
Other food manufacturing	3119	524	502	428	425
Beverage and tobacco product manufacturing	312				
Soft drink and ice manufacturing	31211	329	319	248	227
Breweries	31212	309	300	236	226
Wineries	31213	46	45	38	34
Distilleries	31214	103	96	93	97
Tobacco manufacturing	3122	288	319	287	261
Textile mills	313				
Fibre, yarn and thread mills	3131	33	39	35	33
Fabric mills	3132	172	176	150	155
Textile and fabric finishing and fabric coating	3133	50	50	48	48
Textile product mills	314				
Carpet and rug mills	31411	73	73	68	68
Textile bag and canvas mills	31491	25	24	22	18
Clothing manufacturing	315				
Hosiery and sock mills	31511	36	39	35	40
Other clothing knitting mills	31519	41	39	42	42
Men's and boys' cut and sew clothing manufacturing	31522	159	180	181	170
Women's and girls' cut and sew clothing manufacturing	31523	187	204	188	156
Clothing accessories and other clothing manufacturing	3159	20	20	16	17
Leather and allied product manufacturing	316				
Footwear manufacturing	3162	22	27	25	27
Wood product manufacturing	321				
Sawmills and wood preservation	3211	1,288	1,324	1,226	1,239
Veneer, plywood and engineered wood product manufacturing	3212	538	525	498	496
Other wood product manufacturing	3219	500	479	450	435
Paper manufacturing	322				
Pulp, paper and paperboard mills	3221	1,920	1,958	1,764	1,904
Paperboard container manufacturing	32221	450	464	418	427
Paper bag and coated and treated paper manufacturing	32222	181	192	179	179
Other converted paper product manufacturing	32229	133	130	121	133
Printing and related support activities	323				
Printing	32311	819	860	733	756
Support activities for printing	32312	44	44	40	38
Petroleum and coal products manufacturing	324				
Petroleum refineries	32411	2,595	3,388	3,036	2,988
Chemical manufacturing	325				
Other basic inorganic chemical manufacturing	32518	235	243	237	247
Other basic organic chemical manufacturing	32519	250	264	210	232
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	587	633	544	574
Pesticide and other agricultural chemical manufacturing	32532	70	73	37	29
Pharmaceutical and medicine manufacturing	3254	739	762	619	715
Paint and coating manufacturing	32551	167	170	137	139
Adhesive manufacturing	32552	60	55	50	44
Soap and cleaning compound manufacturing	32561	120	124	120	125
Toilet preparation manufacturing	32562	146	157	149	148
Printing ink manufacturing	32591	36	35	33	33
All other chemical product manufacturing	32599	351	366	349	345

Table 8a

Shipments for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		April 2003	March 2003	February 2003	January 2003
\$ millions					
Plastics and rubber products manufacturing	326				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	158	142	128	126
Polystyrene foam product manufacturing	32614	27	29	22	21
Other plastic product manufacturing	32619	866	765	681	741
Other rubber product manufacturing	32629	215	223	191	194
Non-metallic mineral product manufacturing	327				
Clay product and refractory manufacturing	3271	58	53	47	47
Glass and glass product manufacturing	3272	213	199	173	186
Cement manufacturing	32731	106	80	60	60
Ready-mix concrete manufacturing	32732	159	126	94	89
Other concrete product manufacturing	32739	77	81	57	55
Abrasive product manufacturing	32791	37	40	36	39
All other non-metallic mineral product manufacturing	32799	128	108	104	110
Primary metal manufacturing	331				
Iron and steel mills and ferro-alloy manufacturing	3311	926	923	866	1,036
Iron and steel pipes and tubes manufacturing from purchased steel	33121	207	261	251	263
Foundries	3315	269	298	266	279
Fabricated metal product manufacturing	332				
Cutlery and hand tool manufacturing	3322	56	51	47	47
Plate work and fabricated structural product manufacturing	33231	318	327	283	332
Power boiler and heat exchanger manufacturing	33241	96	109	79	74
Spring and wire product manufacturing	3326	115	119	114	120
Coating, engraving, heat treating and allied activities	3328	234	238	220	228
Other fabricated metal product manufacturing	3329	278	261	251	235
Machinery manufacturing	333				
Agricultural implement manufacturing	33311	212	215	175	150
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	185	185	161	168
All other general-purpose machinery manufacturing	33399	134	174	108	144
Computer and electronic product manufacturing	334				
Computer and peripheral equipment manufacturing	3341	200	402	268	251
Communications equipment manufacturing	3342	382	476	398	387
Audio and video equipment manufacturing	3343	18	14	17	17
Electrical equipment, appliance and component manufacturing	335				
Lighting fixture manufacturing	33512	62	67	61	71
Small electrical appliance manufacturing	33521	19	21	16	21
Major appliance manufacturing	33522	133	130	122	122
Battery manufacturing	33591	13	13	11	12
Communication and energy wire and cable manufacturing	33592	95	108	88	85
All other electrical equipment and component manufacturing	33599	63	63	62	66
Transportation equipment manufacturing	336				
Motor vehicle manufacturing	3361	5,879	6,051	5,513	5,411
Motor vehicle parts manufacturing	3363	2,659	2,863	2,698	2,755
Aerospace product and parts manufacturing	3364	1,189	1,093	930	1,128
Railroad rolling stock manufacturing	3365	234	292	217	303
Ship and boat building	3366	98	100	75	79
Furniture and related product manufacturing	337				
Household and institutional furniture and kitchen cabinet manufacturing	3371	592	577	547	563
Office furniture (including fixtures) manufacturing	3372	378	422	364	372
Miscellaneous manufacturing	339				
Medical equipment and supplies manufacturing	3391	109	123	109	103
Other miscellaneous manufacturing	3399	340	341	314	299

Table 8a

Shipments for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Annual	
		April 2002	March 2002	% Change from 2002	2003	% Change from 2001	2002
\$ millions							
Food manufacturing	311						
Animal food manufacturing	3111	459	452	-1.1	1,721	6.1	5,392
Starch and vegetable fat and oil manufacturing	31122	242	213	12.9	995	3.3	2,811
Sugar and confectionery product manufacturing	3113	296	299	13.3	1,255	1.4	3,846
Fruit and vegetable preserving and specialty food manufacturing	3114	480	484	-2.1	1,873	-1.7	5,923
Dairy product manufacturing	3115	821	809	9.3	3,414	1.2	9,887
Meat product manufacturing	3116	1,455	1,499	-2.2	5,595	-6.6	17,674
Cookie, cracker and pasta manufacturing	31182	110	115	-5.5	446	-7.7	1,425
Other food manufacturing	3119	457	455	9.4	1,878	11.9	5,723
Beverage and tobacco product manufacturing	312						
Soft drink and ice manufacturing	31211	285	281	12.0	1,123	5.2	3,688
Breweries	31212	319	313	-3.5	1,071	2.0	4,103
Wineries	31213	42	41	11.9	162	11.8	585
Distilleries	31214	90	84	9.3	389	9.1	1,265
Tobacco manufacturing	3122	324	336	-4.1	1,155	1.3	3,663
Textile mills	313						
Fibre, yarn and thread mills	3131	40	42	-12.8	140	-5.0	465
Fabric mills	3132	190	183	-8.7	653	-3.2	2,067
Textile and fabric finishing and fabric coating	3133	60	56	-11.9	196	-4.1	678
Textile product mills	314						
Carpet and rug mills	31411	78	77	-3.1	282	-3.6	890
Textile bag and canvas mills	31491	40	35	-35.9	89	7.2	429
Clothing manufacturing	315						
Hosiery and sock mills	31511	37	43	-5.8	151	0.4	511
Other clothing knitting mills	31519	30	31	32.6	164	0.1	519
Men's and boys' cut and sew clothing manufacturing	31522	203	204	-8.9	691	-4.9	2,360
Women's and girls' cut and sew clothing manufacturing	31523	203	213	-6.7	735	-3.7	2,221
Clothing accessories and other clothing manufacturing	3159	22	21	-0.6	73	-4.0	242
Leather and allied product manufacturing	316						
Footwear manufacturing	3162	28	41	-25.5	101	-5.8	518
Wood product manufacturing	321						
Sawmills and wood preservation	3211	1,767	1,619	-17.3	5,077	4.4	17,697
Veneer, plywood and engineered wood product manufacturing	3212	554	530	2.2	2,058	6.1	6,230
Other wood product manufacturing	3219	473	411	18.4	1,865	18.2	5,571
Paper manufacturing	322						
Pulp, paper and paperboard mills	3221	1,905	1,944	-0.2	7,546	-6.8	23,505
Paperboard container manufacturing	32221	393	379	16.4	1,759	3.4	4,914
Paper bag and coated and treated paper manufacturing	32222	199	187	-1.7	730	3.0	2,212
Other converted paper product manufacturing	32229	130	125	1.9	518	0.6	1,610
Printing and related support activities	323						
Printing	32311	839	830	1.4	3,169	-1.4	9,557
Support activities for printing	32312	44	41	2.6	166	-37.0	504
Petroleum and coal products manufacturing	324						
Petroleum refineries	32411	2,261	2,264	44.6	12,006	0.8	29,276
Chemical manufacturing	325						
Other basic inorganic chemical manufacturing	32518	225	209	13.9	962	6.8	2,726
Other basic organic chemical manufacturing	32519	232	228	14.7	956	1.8	2,521
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	564	540	12.2	2,338	0.6	6,379
Pesticide and other agricultural chemical manufacturing	32532	77	57	2.2	210	-13.4	341
Pharmaceutical and medicine manufacturing	3254	638	652	14.0	2,835	22.0	8,402
Paint and coating manufacturing	32551	180	167	-0.1	613	-1.4	1,875
Adhesive manufacturing	32552	60	54	0.5	209	12.2	624
Soap and cleaning compound manufacturing	32561	128	129	-1.2	489	-7.5	1,516
Toilet preparation manufacturing	32562	157	137	2.5	600	3.2	1,663
Printing ink manufacturing	32591	36	36	1.8	137	13.3	419
All other chemical product manufacturing	32599	333	325	11.0	1,411	2.6	4,104

Table 8a

Shipments for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Annual	
		March 2002	February 2002	% Change from 2002	2003	% Change from 2001	2002
\$ millions							
Plastics and rubber products manufacturing	326						
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	155	125	11.9	554	4.2	1,758
Polystyrene foam product manufacturing	32614	24	25	6.0	98	3.8	321
Other plastic product manufacturing	32619	860	744	4.1	3,053	8.6	9,435
Other rubber product manufacturing	32629	219	204	2.5	824	0.0	2,409
Non-metallic mineral product manufacturing	327						
Clay product and refractory manufacturing	3271	54	47	12.2	204	5.0	613
Glass and glass product manufacturing	3272	218	183	5.5	771	6.2	2,396
Cement manufacturing	32731	113	75	-2.9	305	5.7	1,425
Ready-mix concrete manufacturing	32732	174	117	-3.3	468	9.1	2,337
Other concrete product manufacturing	32739	77	62	16.8	270	1.3	1,127
Abrasive product manufacturing	32791	39	37	11.6	153	36.5	450
All other non-metallic mineral product manufacturing	32799	111	85	29.6	451	28.8	1,314
Primary metal manufacturing	331						
Iron and steel mills and ferro-alloy manufacturing	3311	889	827	14.2	3,751	11.3	10,368
Iron and steel pipes and tubes manufacturing from purchased steel	33121	198	196	21.8	982	1.4	2,529
Foundries	3315	282	272	4.2	1,112	8.7	3,161
Fabricated metal product manufacturing	332	42	37	32.8	201	6.3	467
Cutlery and hand tool manufacturing	3322	349	326	-3.3	1,259	0.4	4,286
Plate work and fabricated structural product manufacturing	33231	91	69	16.6	359	7.6	1,022
Power boiler and heat exchanger manufacturing	33241	137	124	-4.2	468	9.8	1,477
Spring and wire product manufacturing	3326	232	225	7.7	919	20.0	2,633
Coating, engraving, heat treating and allied activities	3328	264	245	4.8	1,024	9.5	3,005
Other fabricated metal product manufacturing	3329						
Machinery manufacturing	333	265	223	-12.9	753	6.1	2,323
Agricultural implement manufacturing	33311						
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	190	178	0.7	699	9.7	2,298
All other general-purpose machinery manufacturing	33399	167	196	-18.3	560	15.4	2,275
Computer and electronic product manufacturing	334	427	476	-32.1	1,120	-16.6	4,699
Computer and peripheral equipment manufacturing	3341	496	762	-27.3	1,643	-23.7	7,137
Communications equipment manufacturing	3342	17	17	-7.9	66	-7.2	218
Audio and video equipment manufacturing	3343						
Electrical equipment, appliance and component manufacturing	335	80	71	-6.7	261	-3.7	877
Lighting fixture manufacturing	33512	21	17	6.9	77	-9.3	250
Small electrical appliance manufacturing	33521	142	134	-2.0	507	12.4	1,529
Major appliance manufacturing	33522	12	12	4.7	49	-15.1	139
Battery manufacturing	33591	139	136	-29.2	376	-42.2	1,436
Communication and energy wire and cable manufacturing	33592	63	61	-0.3	254	-2.3	772
All other electrical equipment and component manufacturing	33599						
Transportation equipment manufacturing	336	6,402	5,737	0.5	22,853	5.7	65,797
Motor vehicle manufacturing	3361	2,970	2,835	-0.1	10,975	10.2	32,741
Motor vehicle parts manufacturing	3363	1,003	1,135	3.1	4,339	-15.0	12,472
Aerospace product and parts manufacturing	3364	207	255	11.8	1,046	5.4	2,878
Railroad rolling stock manufacturing	3365	137	105	-27.2	352	20.6	1,242
Ship and boat building	3366						
Furniture and related product manufacturing	337						
Household and institutional furniture and kitchen cabinet manufacturing	3371	642	619	-5.1	2,279	7.7	7,133
Office furniture (including fixtures) manufacturing	3372	333	369	15.9	1,536	-6.0	4,319
Miscellaneous manufacturing	339	124	131	-7.9	443	5.3	1,432
Medical equipment and supplies manufacturing	3391	318	289	9.8	1,295	9.7	4,095
Other miscellaneous manufacturing	3399						

Table 8b
Inventory owned for selected industries, unadjusted

	NAICS Code	Current periods			
		April 2003	March 2003	February 2003	January 2003
\$ millions					
Food manufacturing	311				
Animal food manufacturing	3111	279	283	274	258
Starch and vegetable fat and oil manufacturing	31122	208	216	236	224
Sugar and confectionery product manufacturing	3113	340	348	347	353
Fruit and vegetable preserving and specialty food manufacturing	3114	849	874	891	911
Dairy product manufacturing	3115	790	809	783	763
Meat product manufacturing	3116	847	874	862	840
Cookie, cracker and pasta manufacturing	31182	124	123	124	126
Other food manufacturing	3119	472	470	473	464
Beverage and tobacco product manufacturing	312				
Soft drink and ice manufacturing	31211	264	252	239	218
Breweries	31212	174	166	163	161
Wineries	31213	219	224	227	225
Distilleries	31214	463	504	502	506
Tobacco manufacturing	3122	636	625	635	595
Textile mills	313				
Fibre, yarn and thread mills	3131	55	56	55	53
Fabric mills	3132	366	336	333	335
Textile and fabric finishing and fabric coating	3133	69	70	71	71
Textile product mills	314				
Carpet and rug mills	31411	87	88	83	83
Textile bag and canvas mills	31491	50	51	50	50
Clothing manufacturing	315				
Hosiery and sock mills	31511	154	145	139	125
Other clothing knitting mills	31519	116	108	102	96
Men's and boys' cut and sew clothing manufacturing	31522	419	418	391	377
Women's and girls' cut and sew clothing manufacturing	31523	310	310	342	358
Clothing accessories and other clothing manufacturing	3159	75	68	68	63
Leather and allied product manufacturing	316				
Footwear manufacturing	3162	89	80	79	76
Wood product manufacturing	321				
Sawmills and wood preservation	3211	3,391	3,765	3,517	3,144
Veneer, plywood and engineered wood product manufacturing	3212	769	814	765	704
Other wood product manufacturing	3219	891	907	890	859
Paper manufacturing	322				
Pulp, paper and paperboard mills	3221	2,550	2,552	2,529	2,488
Paperboard container manufacturing	32221	578	540	542	511
Paper bag and coated and treated paper manufacturing	32222	279	282	270	271
Other converted paper product manufacturing	32229	154	154	148	143
Printing and related support activities	323				
Printing	32311	714	707	659	628
Support activities for printing	32312	8	10	11	11
Petroleum and coal products manufacturing	324				
Petroleum refineries	32411	1,444	1,403	1,321	1,338
Chemical manufacturing	325				
Other basic inorganic chemical manufacturing	32518	185	182	177	174
Other basic organic chemical manufacturing	32519	184	177	165	151
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	620	573	541	528
Pesticide and other agricultural chemical manufacturing	32532	135	132	118	119
Pharmaceutical and medicine manufacturing	3254	3,171	3,198	3,134	2,942
Paint and coating manufacturing	32551	271	263	254	242
Adhesive manufacturing	32552	91	90	85	84
Soap and cleaning compound manufacturing	32561	102	104	105	108
Toilet preparation manufacturing	32562	191	188	184	188
Printing ink manufacturing	32591	49	47	52	52
All other chemical product manufacturing	32599	332	328	323	316

Table 8b

Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		April 2003	March 2003	February 2003	January 2003
		\$ millions			
Plastics and rubber products manufacturing	326				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	234	234	225	225
Polystyrene foam product manufacturing	32614	39	40	37	39
Other plastic product manufacturing	32619	915	940	904	908
Other rubber product manufacturing	32629	193	188	188	191
Non-metallic mineral product manufacturing	327				
Clay product and refractory manufacturing	3271	96	92	89	90
Glass and glass product manufacturing	3272	283	282	276	275
Cement manufacturing	32731	201	202	200	203
Ready-mix concrete manufacturing	32732	95	96	94	94
Other concrete product manufacturing	32739	92	87	88	84
Abrasive product manufacturing	32791	130	130	137	138
All other non-metallic mineral product manufacturing	32799	146	149	146	145
Primary metal manufacturing	331				
Iron and steel mills and ferro-alloy manufacturing	3311	2,072	2,080	2,213	2,267
Iron and steel pipes and tubes manufacturing from purchased steel	33121	617	613	586	588
Foundries	3315	298	307	300	288
Fabricated metal product manufacturing	332				
Cutlery and hand tool manufacturing	3322	82	88	90	89
Plate work and fabricated structural product manufacturing	33231	478	458	449	435
Power boiler and heat exchanger manufacturing	33241	191	187	173	175
Spring and wire product manufacturing	3326	148	150	159	160
Coating, engraving, heat treating and allied activities	3328	167	165	170	168
Other fabricated metal product manufacturing	3329	569	567	555	564
Machinery manufacturing	333				
Agricultural implement manufacturing	33311	560	553	548	548
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	332	336	336	327
All other general-purpose machinery manufacturing	33399	381	377	361	379
Computer and electronic product manufacturing	334				
Computer and peripheral equipment manufacturing	3341	574	577	606	588
Communications equipment manufacturing	3342	2,168	2,143	2,276	2,283
Audio and video equipment manufacturing	3343	59	58	56	56
Electrical equipment, appliance and component manufacturing	335				
Lighting fixture manufacturing	33512	135	146	144	151
Small electrical appliance manufacturing	33521	49	48	47	47
Major appliance manufacturing	33522	197	190	171	163
Battery manufacturing	33591	69	66	66	63
Communication and energy wire and cable manufacturing	33592	287	279	263	265
All other electrical equipment and component manufacturing	33599	108	105	107	110
Transportation equipment manufacturing	336				
Motor vehicle manufacturing	3361	1,507	1,600	1,680	1,650
Motor vehicle parts manufacturing	3363	1,994	1,922	1,950	1,934
Aerospace product and parts manufacturing	3364	7,751	7,866	7,677	7,326
Railroad rolling stock manufacturing	3365	1,240	1,229	1,283	1,322
Ship and boat building	3366	127	131	132	135
Furniture and related product manufacturing	337				
Household and institutional furniture and kitchen cabinet manufacturing	3371	846	862	828	818
Office furniture (including fixtures) manufacturing	3372	428	432	406	413
Miscellaneous manufacturing	339				
Medical equipment and supplies manufacturing	3391	164	161	170	168
Other miscellaneous manufacturing	3399	939	935	912	923

Table 8b

Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Average per month	
		April 2002	March 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
Food manufacturing	311						
Animal food manufacturing	3111	263	258	4.2	274	7.2	263
Starch and vegetable fat and oil manufacturing	31122	180	180	19.7	221	6.5	189
Sugar and confectionery product manufacturing	3113	344	338	-1.6	347	-1.3	359
Fruit and vegetable preserving and specialty food manufacturing	3114	788	830	6.1	881	7.6	868
Dairy product manufacturing	3115	781	755	6.5	786	5.3	748
Meat product manufacturing	3116	920	943	-8.8	856	-1.6	884
Cookie, cracker and pasta manufacturing	31182	103	101	8.7	124	-1.9	115
Other food manufacturing	3119	483	464	1.3	470	4.4	482
Beverage and tobacco product manufacturing	312						
Soft drink and ice manufacturing	31211	262	242	5.4	243	13.8	253
Breweries	31212	175	157	7.0	166	10.2	168
Wineries	31213	205	210	7.8	224	12.6	209
Distilleries	31214	473	458	9.3	494	12.1	484
Tobacco manufacturing	3122	646	676	-5.5	623	-6.2	602
Textile mills	313						
Fibre, yarn and thread mills	3131	63	62	-14.0	55	-22.3	58
Fabric mills	3132	402	402	-14.7	343	-7.1	368
Textile and fabric finishing and fabric coating	3133	59	58	20.3	70	-7.4	60
Textile product mills	314						
Carpet and rug mills	31411	80	80	7.5	85	-21.6	81
Textile bag and canvas mills	31491	70	66	-23.5	50	5.1	67
Clothing manufacturing	315						
Hosiery and sock mills	31511	137	137	6.0	141	-0.7	136
Other clothing knitting mills	31519	101	95	11.4	105	0.2	103
Men's and boys' cut and sew clothing manufacturing	31522	359	359	13.4	401	-19.9	369
Women's and girls' cut and sew clothing manufacturing	31523	346	362	-3.7	330	-7.8	351
Clothing accessories and other clothing manufacturing	3159	63	64	8.9	69	-14.6	64
Leather and allied product manufacturing	316						
Footwear manufacturing	3162	93	83	-2.4	81	-10.9	92
Wood product manufacturing	321						
Sawmills and wood preservation	3211	3,264	3,708	-0.9	3,454	-9.8	2,996
Veneer, plywood and engineered wood product manufacturing	3212	686	721	10.2	763	-4.4	652
Other wood product manufacturing	3219	794	793	13.5	887	7.2	801
Paper manufacturing	322						
Pulp, paper and paperboard mills	3221	2,616	2,609	-3.5	2,530	-8.5	2,549
Paperboard container manufacturing	32221	531	526	3.2	543	-5.0	514
Paper bag and coated and treated paper manufacturing	32222	256	252	8.9	276	2.2	254
Other converted paper product manufacturing	32229	145	144	5.2	150	-3.8	147
Printing and related support activities	323						
Printing	32311	705	719	-3.7	677	-4.4	688
Support activities for printing	32312	13	15	-33.2	10	-42.6	14
Petroleum and coal products manufacturing	324						
Petroleum refineries	32411	1,376	1,352	-0.8	1,376	-12.4	1,322
Chemical manufacturing	325						
Other basic inorganic chemical manufacturing	32518	196	205	-11.6	180	-4.3	184
Other basic organic chemical manufacturing	32519	142	145	11.6	169	-23.8	146
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	537	536	3.6	565	-18.9	525
Pesticide and other agricultural chemical manufacturing	32532	178	208	-25.0	126	-20.3	133
Pharmaceutical and medicine manufacturing	3254	2,610	2,481	25.3	3,111	32.8	2,665
Paint and coating manufacturing	32551	259	255	-0.1	258	-9.1	249
Adhesive manufacturing	32552	85	85	5.4	88	15.5	81
Soap and cleaning compound manufacturing	32561	145	147	-27.3	105	-11.8	129
Toilet preparation manufacturing	32562	148	148	22.9	188	-6.8	162
Printing ink manufacturing	32591	47	61	-2.7	50	-4.2	50
All other chemical product manufacturing	32599	302	296	8.5	325	-0.9	312

Table 8b

Inventory owned for selected industries, unadjusted - concluded

	NAICS Code	Previous year		Year-to-date		Average per month	
		April 2002	March 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
Plastics and rubber products manufacturing	326						
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	227	235	0.7	230	-6.3	223
Polystyrene foam product manufacturing	32614	32	31	27.8	38	1.6	31
Other plastic product manufacturing	32619	841	823	11.7	917	7.8	848
Other rubber product manufacturing	32629	185	186	-1.1	190	-7.2	189
Non-metallic mineral product manufacturing	327						
Clay product and refractory manufacturing	3271	89	91	1.1	92	-12.2	89
Glass and glass product manufacturing	3272	285	298	-1.0	279	2.8	272
Cement manufacturing	32731	213	217	-4.5	201	-1.9	187
Ready-mix concrete manufacturing	32732	100	105	-9.1	95	-8.6	102
Other concrete product manufacturing	32739	87	90	3.1	87	1.3	82
Abrasive product manufacturing	32791	165	150	-5.1	134	32.0	151
All other non-metallic mineral product manufacturing	32799	144	127	9.6	147	0.9	141
Primary metal manufacturing	331						
Iron and steel mills and ferro-alloy manufacturing	3311	1,884	1,875	12.6	2,158	-1.1	2,050
Iron and steel pipes and tubes manufacturing from purchased steel	33121	509	487	19.8	601	6.7	543
Foundries	3315	301	290	2.0	298	1.0	287
Fabricated metal product manufacturing	332						
Cutlery and hand tool manufacturing	3322	82	80	8.3	87	9.3	83
Plate work and fabricated structural product manufacturing	33231	439	451	3.1	455	2.9	448
Power boiler and heat exchanger manufacturing	33241	144	149	29.9	181	27.1	148
Spring and wire product manufacturing	3326	145	151	2.7	154	-7.4	154
Coating, engraving, heat treating and allied activities	3328	145	150	12.1	167	16.4	156
Other fabricated metal product manufacturing	3329	554	542	3.1	564	3.6	548
Machinery manufacturing	333						
Agricultural implement manufacturing	33311	512	520	7.2	552	1.5	510
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	361	359	-5.9	333	6.8	345
All other general-purpose machinery manufacturing	33399	324	312	10.9	374	12.2	363
Computer and electronic product manufacturing	334						
Computer and peripheral equipment manufacturing	3341	611	641	-6.4	586	-42.7	607
Communications equipment manufacturing	3342	2,615	2,570	-18.5	2,217	-19.6	2,447
Audio and video equipment manufacturing	3343	45	44	27.2	57	-10.6	51
Electrical equipment, appliance and component manufacturing	335						
Lighting fixture manufacturing	33512	168	164	-13.1	144	-2.7	160
Small electrical appliance manufacturing	33521	37	37	29.0	48	-19.2	43
Major appliance manufacturing	33522	169	174	10.3	180	10.6	160
Battery manufacturing	33591	74	76	-8.1	66	44.2	70
Communication and energy wire and cable manufacturing	33592	299	306	-9.7	274	-42.2	291
All other electrical equipment and component manufacturing	33599	114	120	-9.2	108	-24.2	111
Transportation equipment manufacturing	336						
Motor vehicle manufacturing	3361	1,739	1,650	-6.8	1,609	2.9	1,730
Motor vehicle parts manufacturing	3363	1,714	1,689	14.8	1,950	3.9	1,762
Aerospace product and parts manufacturing	3364	7,589	7,838	0.9	7,655	0.3	7,817
Railroad rolling stock manufacturing	3365	1,273	1,233	-0.1	1,268	-14.0	1,338
Ship and boat building	3366	127	129	-30.3	131	-35.7	145
Furniture and related product manufacturing	337						
Household and institutional furniture and kitchen cabinet manufacturing	3371	745	724	16.0	838	9.7	772
Office furniture (including fixtures) manufacturing	3372	410	396	5.2	420	-11.1	398
Miscellaneous manufacturing	339						
Medical equipment and supplies manufacturing	3391	183	176	-7.2	166	-5.8	180
Other miscellaneous manufacturing	3399	819	852	11.5	927	5.4	879

Table 9
Inventories owned by stage of fabrication

Period covered	Unadjusted			
	Raw materials	Goods in process	Finished products	Total inventories
April 2002	27,133	15,604	19,748	62,485
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	28,290	16,072	19,807	64,170
March 2003	28,459	16,085	20,316	64,860
April 2003	28,026	16,092	20,571	64,690
Period covered	Seasonally adjusted			
	Raw materials	Goods in process	Finished products	Total inventories
April 2002	26,882	15,628	19,351	61,861
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	27,663	16,101	19,726	63,490
March 2003	27,833	16,014	19,883	63,730
April 2003	27,844	16,129	20,127	64,101

Table 10
Shipments by major group and province, unadjusted

Province	Current year			
	April 2003	March 2003	February 2003	January 2003
	\$ millions			
Total				
Newfoundland and Labrador	159	151	134	146
Prince Edward Island	87	84	77	86
Nova Scotia	681	756	692	698
New Brunswick	1,055	1,120	968	1,028
Quebec	10,042	10,414	9,309	9,487
Ontario	23,544	24,765	22,194	22,801
Manitoba	1,022	998	915	915
Saskatchewan	646	656	568	596
Alberta	3,409	3,814	3,387	3,524
British Columbia	2,820	2,829	2,590	2,592
311 Food manufacturing				
Newfoundland and Labrador	37	38	37	35
Prince Edward Island	55	61	53	64
Nova Scotia	162	185	168	157
New Brunswick	103	106	97	109
Quebec	1,130	1,139	1,076	1,055
Ontario	2,168	2,130	1,899	1,935
Manitoba	253	256	234	245
Saskatchewan	165	149	137	152
Alberta	781	794	730	750
British Columbia	368	357	308	326
312 Beverage and tobacco product manufacturing				
Nova Scotia	19	18	15	12
Quebec	321	334	248	265
Ontario	534	534	482	420
Saskatchewan	5	5	4	3
British Columbia	84	78	64	60
313 Textile mills				
Quebec	164	170	149	146
Ontario	71	72	66	69
314 Textile product mills				
Quebec	78	80	73	68
Ontario	89	87	86	87
Alberta	3	2	2	2
British Columbia	8	9	7	7
315 Clothing manufacturing				
Quebec	310	336	323	278
Ontario	137	151	148	143
Manitoba	25	24	26	24
Saskatchewan	2	2	2	2
Alberta	7	7	6	7
British Columbia	19	22	23	23
316 Leather and allied product manufacturing				
Quebec	22	24	23	24
Ontario	12	15	12	13
321 Wood product manufacturing				
Nova Scotia	40	40	37	39
Quebec	669	653	607	596
Ontario	447	446	411	423
Manitoba	41	38	31	37
Saskatchewan	41	40	39	36
Alberta	178	173	167	173
British Columbia	772	810	775	756

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

Province	Current year			
	April 2003	March 2003	February 2003	January 2003
	\$ millions			
322 Paper manufacturing				
Nova Scotia	81	78	71	66
Quebec	935	968	888	940
Ontario	821	867	791	826
Alberta	129	134	124	124
British Columbia	443	445	387	421
323 Printing and related support activities				
Quebec	248	246	223	225
Ontario	452	489	400	416
Manitoba	36	33	31	30
Saskatchewan	8	11	8	8
Alberta	46	49	43	45
British Columbia	43	46	42	43
324 Petroleum and coal products manufacturing				
Quebec	583	770	751	703
Ontario	835	1,074	910	939
Alberta	611	839	748	714
British Columbia	68	63	63	64
325 Chemical manufacturing				
Quebec	765	747	655	654
Ontario	1,818	1,907	1,671	1,798
Manitoba	67	59	53	62
Saskatchewan	82	77	53	55
Alberta	577	636	572	628
British Columbia	117	105	96	92
326 Plastics and rubber products manufacturing				
Nova Scotia	88	84	82	92
Quebec	499	485	411	405
Ontario	1,229	1,174	1,080	1,158
Manitoba	45	41	41	40
Saskatchewan	10	10	8	7
Alberta	82	84	72	72
British Columbia	92	84	76	74
327 Non-metallic mineral product manufacturing				
Nova Scotia	10	8	6	9
Quebec	223	182	136	142
Ontario	450	381	330	334
Saskatchewan	5	4	3	3
Alberta	107	104	97	101
British Columbia	124	118	100	97
331 Primary metal manufacturing				
Quebec	1,101	1,094	1,037	1,089
Ontario	1,432	1,507	1,368	1,515
Alberta	60	91	89	96
332 Fabricated metal product manufacturing				
Newfoundland and Labrador	11	10	8	8
Prince Edward Island	3	2	3	1
Nova Scotia	18	18	19	19
New Brunswick	17	18	19	18
Quebec	405	420	369	382
Ontario	1,347	1,337	1,223	1,253
Manitoba	88	73	81	66
Saskatchewan	37	38	30	31
Alberta	253	275	221	238
British Columbia	134	133	126	123

Table 10

Shipments by major group and province, unadjusted - continued

Province	Current year			
	April 2003	March 2003	February 2003	January 2003
	\$ millions			
333 Machinery manufacturing				
Quebec	345	422	347	335
Ontario	1,023	1,104	951	970
Manitoba	73	84	74	74
Saskatchewan	65	66	52	46
Alberta	231	272	216	235
British Columbia	133	143	146	126
334 Computer and electronic product manufacturing				
Quebec	388	520	443	417
Ontario	726	1,001	811	793
Saskatchewan	8	9	7	8
Alberta	74	91	72	88
British Columbia	70	67	57	54
335 Electrical equipment, appliance and component manufacturing				
Quebec	227	253	221	244
Ontario	411	449	389	395
Manitoba	14	12	12	13
Saskatchewan	12	13	9	10
Alberta	33	29	27	27
British Columbia	29	34	30	29
336 Transportation equipment manufacturing				
Nova Scotia	57	69	47	53
Quebec	1,241	1,145	957	1,169
Ontario	8,748	9,240	8,429	8,574
Manitoba	176	168	135	128
Saskatchewan	29	28	25	30
Alberta	81	81	67	72
British Columbia	105	103	89	90
337 Furniture and related product manufacturing				
Quebec	280	292	253	241
Ontario	565	578	533	570
Manitoba	60	63	60	55
Saskatchewan	6	7	6	6
Alberta	66	66	59	67
British Columbia	46	43	44	46
339 Miscellaneous manufacturing				
Newfoundland and Labrador	1	1	1	0
Quebec	109	134	119	110
Ontario	229	221	203	171
Manitoba	7	8	8	7
Saskatchewan	5	4	3	4
Alberta	30	27	26	42
British Columbia	49	48	43	48

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

	Previous year		Year-to-date		Annual	
	April 2002	March 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
Total						
Newfoundland and Labrador	154	147	3.0	590	1.3	2,234
Prince Edward Island	90	84	-1.1	334	9.5	1,316
Nova Scotia	680	644	9.8	2,827	1.3	8,646
New Brunswick	1,043	935	16.4	4,171	3.1	12,632
Quebec	10,190	10,196	1.4	39,252	0.9	122,059
Ontario	24,670	23,485	2.7	93,305	3.4	277,581
Manitoba	1,007	932	3.7	3,850	0.6	11,538
Saskatchewan	664	618	2.1	2,466	1.3	7,239
Alberta	3,236	3,173	14.7	14,135	-3.4	40,966
British Columbia	2,969	2,893	0.1	10,831	0.4	34,236
311 Food manufacturing						
Newfoundland and Labrador	48	49	-18.3	147	10.3	891
Prince Edward Island	60	58	-2.2	234	8.0	952
Nova Scotia	170	162	2.9	672	2.2	2,234
New Brunswick	131	106	-6.3	416	4.6	2,004
Quebec	1,074	1,113	3.9	4,401	1.4	13,573
Ontario	2,080	2,056	2.5	8,132	-0.1	25,085
Manitoba	255	237	2.1	987	4.3	3,023
Saskatchewan	155	132	6.3	604	3.3	1,825
Alberta	738	737	6.7	3,055	-1.0	9,055
British Columbia	339	332	7.5	1,358	3.4	4,270
312 Beverage and tobacco product manufacturing						
Nova Scotia	16	15	17.5	65	1.5	213
Quebec	330	335	-0.8	1,167	5.7	4,093
Ontario	515	519	3.3	1,970	2.6	6,514
Saskatchewan	9	8	-44.5	17	-7.8	92
British Columbia	77	72	11.7	285	9.1	990
313 Textile mills						
Quebec	187	185	-11.2	628	-2.6	2,069
Ontario	85	78	-12.1	279	-5.3	912
314 Textile product mills						
Quebec	89	85	-8.0	299	-2.1	1,020
Ontario	103	99	-7.7	349	3.8	1,138
Alberta	2	2	7.8	9	-14.4	28
British Columbia	15	12	-36.3	31	4.0	153
315 Clothing manufacturing						
Quebec	334	342	-4.0	1,247	-7.4	3,937
Ontario	184	186	-14.8	579	6.6	2,020
Manitoba	24	27	12.6	99	13.1	376
Saskatchewan	1	1	25.7	8	-5.6	22
Alberta	8	6	-6.5	27	-6.8	89
British Columbia	20	20	3.0	87	-15.8	263
316 Leather and allied product manufacturing						
Quebec	24	23	-6.1	94	-18.8	430
Ontario	16	29	-34.5	52	11.9	225
321 Wood product manufacturing						
Nova Scotia	47	45	-6.9	155	10.1	530
Quebec	714	662	2.3	2,524	11.9	7,637
Ontario	523	478	-6.0	1,727	7.7	5,622
Manitoba	42	39	-2.9	146	-13.5	501
Saskatchewan	43	34	23.4	156	39.0	430
Alberta	219	186	-6.8	691	2.8	2,265
British Columbia	1,051	976	-16.4	3,113	4.8	10,830

Table 10

Shipments by major group and province, unadjusted - continued

	Previous year		Year-to-date		Annual	
	April 2002	March 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
322 Paper manufacturing						
Nova Scotia	73	70	5.6	296	-17.9	881
Quebec	948	971	-0.8	3,731	-2.7	11,729
Ontario	863	817	-0.4	3,306	-3.6	10,091
Alberta	107	119	5.8	511	4.0	1,553
British Columbia	364	417	13.1	1,696	-11.7	4,790
323 Printing and related support activities						
Quebec	237	228	5.7	941	-11.3	2,749
Ontario	483	478	-1.3	1,757	2.0	5,351
Manitoba	36	35	-7.8	130	-6.4	436
Saskatchewan	8	10	11.4	35	6.1	106
Alberta	52	50	-2.0	183	-5.4	574
British Columbia	53	57	-15.1	174	-10.7	608
324 Petroleum and coal products manufacturing						
Quebec	515	495	50.7	2,807	6.7	6,845
Ontario	763	738	35.9	3,758	-2.9	9,861
Alberta	538	554	45.3	2,911	1.0	7,491
British Columbia	60	64	5.3	258	-4.8	754
325 Chemical manufacturing						
Quebec	722	687	2.2	2,821	6.8	8,711
Ontario	1,717	1,647	13.7	7,194	7.8	20,076
Manitoba	48	38	33.5	241	-12.6	616
Saskatchewan	96	72	2.9	267	-10.8	562
Alberta	528	467	27.2	2,413	-6.7	6,456
British Columbia	85	85	30.0	410	7.1	1,076
326 Plastics and rubber products manufacturing						
Nova Scotia	102	91	-6.0	345	6.9	1,141
Quebec	463	433	9.7	1,800	10.7	5,208
Ontario	1,261	1,115	3.9	4,641	6.9	13,805
Manitoba	45	44	2.8	167	7.5	508
Saskatchewan	8	9	11.5	36	5.4	98
Alberta	87	75	5.5	310	-4.0	1,023
British Columbia	86	79	9.4	326	-3.1	1,008
327 Non-metallic mineral product manufacturing						
Nova Scotia	12	9	-8.6	32	1.2	162
Quebec	228	165	5.4	683	10.8	2,701
Ontario	438	346	6.3	1,495	4.9	5,264
Saskatchewan	7	4	-18.1	16	-8.2	113
Alberta	104	83	18.1	408	24.1	1,510
British Columbia	115	92	19.3	438	17.0	1,357
331 Primary metal manufacturing						
Quebec	1,096	1,086	2.5	4,321	7.8	12,712
Ontario	1,416	1,289	13.3	5,821	11.9	16,003
Alberta	60	69	21.8	337	-10.7	896
332 Fabricated metal product manufacturing						
Newfoundland and Labrador	8	6	84.4	37	-15.5	88
Prince Edward Island	3	1	28.7	9	-1.5	25
Nova Scotia	21	20	0.3	75	17.2	264
New Brunswick	21	22	-11.7	73	-5.7	268
Quebec	434	410	-1.7	1,576	1.8	5,329
Ontario	1,430	1,362	-3.5	5,161	4.7	16,165
Manitoba	53	55	53.2	308	-2.0	707
Saskatchewan	35	31	13.6	135	-6.5	416
Alberta	204	196	22.6	987	-2.7	2,637
British Columbia	140	123	4.2	516	2.2	1,609

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

	Previous year		Year-to-date		Annual	
	April 2002	March 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
333 Machinery manufacturing						
Quebec	390	405	-5.9	1,449	0.2	4,587
Ontario	1,127	1,117	-4.2	4,048	4.1	12,943
Manitoba	109	93	-18.3	305	9.4	1,042
Saskatchewan	75	68	-14.8	229	7.4	662
Alberta	254	263	-7.6	953	-14.5	2,872
British Columbia	124	129	20.2	548	8.7	1,594
334 Computer and electronic product manufacturing						
Quebec	452	667	-14.6	1,767	-18.1	6,588
Ontario	1,037	1,199	-17.6	3,331	-13.9	11,900
Saskatchewan	8	8	7.3	32	12.7	94
Alberta	70	118	-10.9	325	-29.9	1,392
British Columbia	65	77	-3.0	249	-17.7	879
335 Electrical equipment, appliance and component manufacturing						
Quebec	256	247	-0.3	946	10.6	2,930
Ontario	461	465	-8.0	1,645	-12.2	5,210
Manitoba	18	18	-15.2	51	-14.7	183
Saskatchewan	23	21	-48.8	45	-45.0	208
Alberta	28	23	14.6	116	9.5	328
British Columbia	30	31	5.8	121	-32.9	345
336 Transportation equipment manufacturing						
Nova Scotia	69	63	-25.1	225	29.7	862
Quebec	1,283	1,245	-7.9	4,512	-7.0	14,134
Ontario	9,411	8,711	2.3	34,990	6.5	100,483
Manitoba	154	132	6.4	607	0.2	1,603
Saskatchewan	35	26	-4.1	112	21.7	349
Alberta	70	70	10.7	302	0.5	785
British Columbia	142	115	-12.9	386	-4.9	1,283
337 Furniture and related product manufacturing						
Quebec	287	280	0.5	1,067	11.4	3,293
Ontario	560	583	3.4	2,247	-2.2	6,629
Manitoba	66	62	-3.8	238	11.3	743
Saskatchewan	8	7	-6.9	26	3.3	89
Alberta	70	69	-4.5	258	-3.9	838
British Columbia	40	40	11.7	178	14.4	525
339 Miscellaneous manufacturing						
Newfoundland and Labrador	2	2	-41.1	4	22.1	18
Quebec	128	133	-3.7	472	11.3	1,785
Ontario	198	173	12.7	824	6.8	2,284
Manitoba	7	11	-10.8	30	-11.0	107
Saskatchewan	4	3	13.0	16	-2.0	44
Alberta	34	30	-3.4	126	7.8	440
British Columbia	49	47	6.2	188	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
%					
April 2002	0.61	1.34	0.81	1.52	1.39
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
December 2002	0.54	0.92	0.74	1.20	1.82
January 2003	0.52	0.89	0.75	1.25	1.81
February 2003	0.52	0.88	0.72	1.25	1.77
March 2003	0.52	0.92	0.75	1.28	1.76
April 2003	0.54	0.92	0.78	1.32	1.68

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	93.27	4.76	1.97
Raw Materials	79.63	17.34	3.03
Goods in Process	83.46	10.87	5.68
Finished Products	80.97	14.60	4.42
Unfilled Orders	88.44	5.53	6.03

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.

Y-A	M
-----	---

// / / / / / -

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:



<<

>>

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

Thank you for your cooperation – Merci de votre collaboration

5-3100-1054:2002-05-14 STC/MCE 310-60194 – SQC/MCE 310-60194



Statistics Canada
Statistique Canada

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
