



Catalogue no. 31-001-XIE

# Monthly Survey of Manufacturing

March 2004



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Statistics Canada

Manufacturing, Construction and Energy Division  
Monthly survey of manufacturing section

# Monthly Survey of Manufacturing

March 2004

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# Symbols

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The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0<sup>s</sup> value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- P preliminary
- r revised
- x confidential to meet secrecy requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

## Acknowledgments

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.

## 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 consult our documentation on Statistics Canada's Website.

## Schedule of releases

<b>Schedule of releases</b>	<b>Monthly survey of manufacturing</b>
Reference period	Release date
November 2003	January 21, 2004
December 2003	February 13, 2004
January 2004	March 16, 2004
February 2004	April 15, 2004
March 2004	May 14, 2004
April 2004	June 15, 2004
May 2004	July 15, 2004
June 2004	August 13, 2004
July 2004	September 15, 2004
August 2004	October 15, 2004
September 2004	November 15, 2004
October 2004	December 15, 2004

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# Highlights

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## Monthly Survey of Manufacturing

- Factory floors were humming in March as manufacturers posted broad-based gains. Shipments soared 3.4% to \$47.7 billion, inventories continued to accumulate and manufacturers' backlog of unfilled orders climbed for the third straight month.



## Analysis – March 2004

Factory floors were humming in March as manufacturers posted broad-based gains. Shipments soared 3.4% to \$47.7 billion, inventories continued to accumulate and manufacturers' backlog of unfilled orders climbed for the third straight month.

March's big boost in shipments, coupled with the small rise in inventories, triggered a sharp drop in the inventory-to-shipment ratio. From February's 1.27, the ratio fell to 1.23 in March, a nine-year low. The ratio is a key measure of the time, in months, that would be required in order to exhaust inventories if shipments were to remain at their current level.

### Provinces and territories post big gains across the board

Healthy gains were reported by all provinces and the territories in March. Ontario led the pack with shipments of \$24.8 billion, up \$799 million (+3.3%). Motor vehicle, fabricated metal products and primary metals manufacturing contributed to the third increase in shipments in the last four months.

Quebec and British Columbia posted increases of \$210 million (+1.9%) and \$145 million (+4.6%) respectively. In Quebec, shipments were \$11.2 billion in March, bolstered by large orders shipped in the primary metals and wood products industries.

Text Table 1

#### Shipments by province and territory

	February 2004	March 2004	February 2004 to March 2004
	seasonally adjusted		
	\$ millions		% change
<b>Canada</b>	<b>46,152</b>	<b>47,708</b>	<b>3.4</b>
Newfoundland and Labrador	236	243	2.9
Prince Edward Island	124	128	2.9
Nova Scotia	695	754	8.5
New Brunswick	1,093	1,166	6.7
Quebec	11,030	11,240	1.9
Ontario	23,997	24,796	3.3
Manitoba	974	1,024	5.1
Saskatchewan	725	796	9.7
Alberta	4,088	4,226	3.4
British Columbia	3,184	3,329	4.6
Yukon Territory	1	1	16.1
Northwest Territories including Nunavut	5	5	6.0

British Columbia reported shipments of \$3.3 billion, the highest level in just over three years. The key contributors were resource-based industries including paper and wood products.

### Despite a solid month, manufacturers' outlook remains uncertain

Several factors have been lingering on the horizon for manufacturers, notwithstanding March's upbeat report. The recent strength of the Canadian dollar and the higher input costs as a result of near-record high crude oil prices have been major hurdles for the bottom line of manufacturers.

In addition, many industries dependent on steel as a key input have raised concerns of a possible shortage of the product and its escalating cost. This follows months of skyrocketing demand for raw steel by China. According to the latest Quarterly Business Conditions Survey for April, uncertainty best described manufacturers' confidence regarding the outlook for the second quarter of 2004.

Despite the foregoing, manufacturers seem to be holding their own. Global demand, particularly by the United States and Asia, has improved significantly over the last few months. Canada's manufacturing sector has reported consecutive gains in shipments for February (+1.1%) and March (+3.4%). In the first quarter of 2004, shipments increased 1.3% compared with the January-to-March period of 2003.

### US factories are also bustling

Along with Canadian manufacturers, the US also enjoyed a stellar month. US shipments soared 3.8% to \$361.3 billion in March, the largest percent increase in shipments since the current series started in 1992. Increases in fabricated metal products, primary metals and petroleum were among the principal contributors.

### Widespread gains on the home front

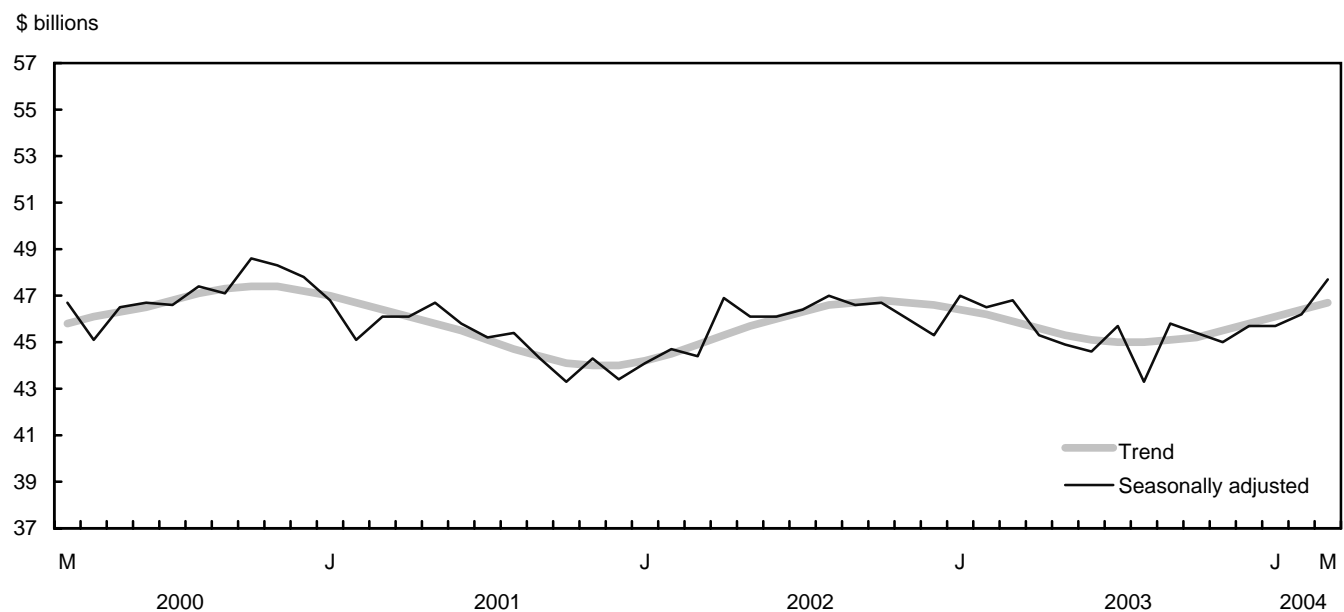
In Canada, 19 of 21 manufacturing industries, accounting for 98% of total shipments, reported increases in March.

Shipments of motor vehicles accelerated 8.2% to \$5.8 billion, outpacing all other industries. Improved incentive packages, coupled with the manufacturing of new product lines and strong demand for various models, contributed to the third boost in motor vehicle production in the last four months.

Also up sharply in March were the primary metals (+5.5%), fabricated metal products (+5.5%) and wood products (+5.2%) industries. Heated global demand and higher industrial prices in the primary metals and wood sectors have so far boosted shipment values in 2004.

Chart 1

### Big gains in shipments



### Rising raw materials build up total inventories

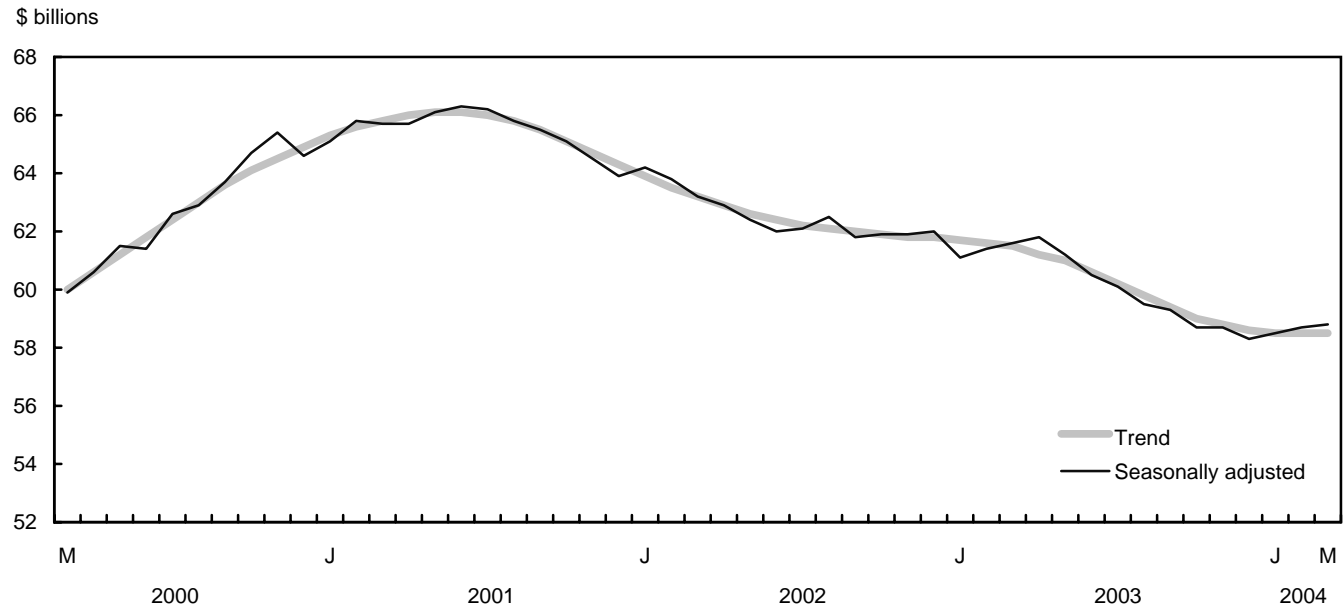
Inventories continued their upswing of recent months, rising 0.3% to \$58.8 billion in March, a six-month high. A 0.8% boost in raw materials (\$25.4 billion) was the main contributor.

In 2003, raw material inventories were cut extensively. Following the recent shipment gains of 2004, manufacturers appear to be cautiously anticipating further opportunities to boost production, and have started to accumulate raw materials. The trend for raw materials has been gradually improving since last autumn.

Meanwhile, goods-in-process inventories inched up by 0.2%, as finished products fell back 0.4% to \$20.2 billion. This marked the 10th decline in finished-product inventories in the last 11 months. Despite the recent string of declines in finished products, some manufacturers (17%) still feel their finished-product inventories remain too high, according to the Quarterly Business Conditions Survey for April.

Chart 2

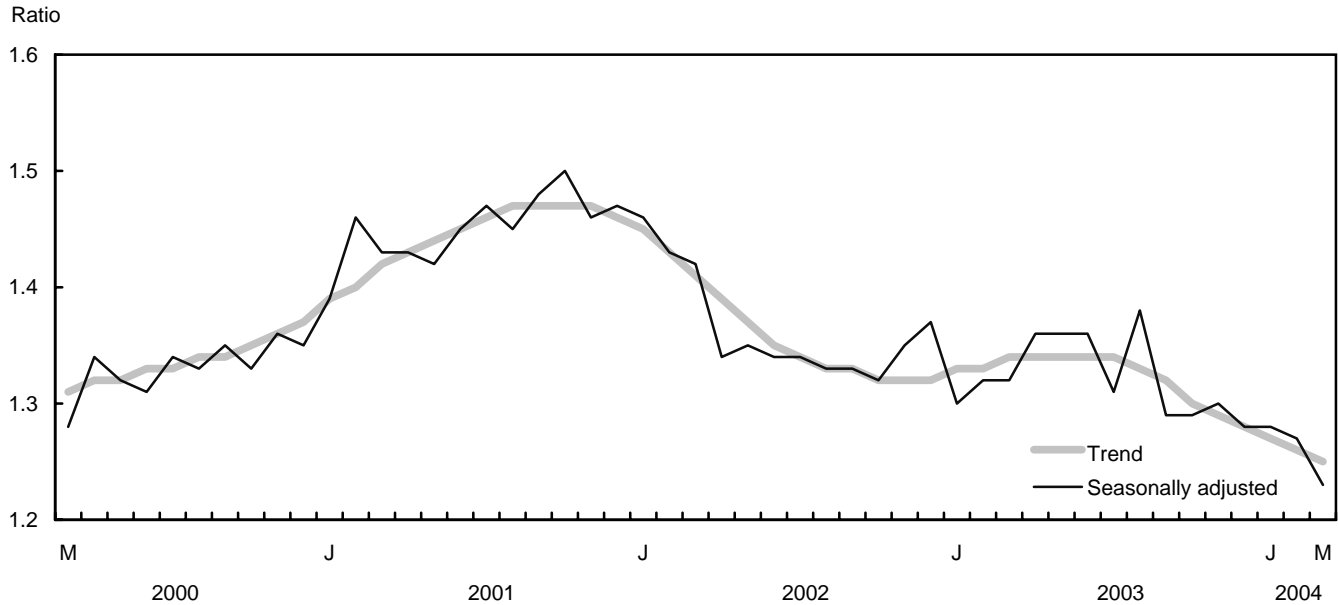
#### Raw materials boost total inventories in March



Motor vehicles (+10.5%), petroleum and coal products (+3.2%) and fabricated metal products (+1.7%) manufacturing were the principal industries reporting higher inventories in March.

Chart 3

The inventory-to-shipments drops to a nine-year low



Manufacturers' unfilled orders on the rise

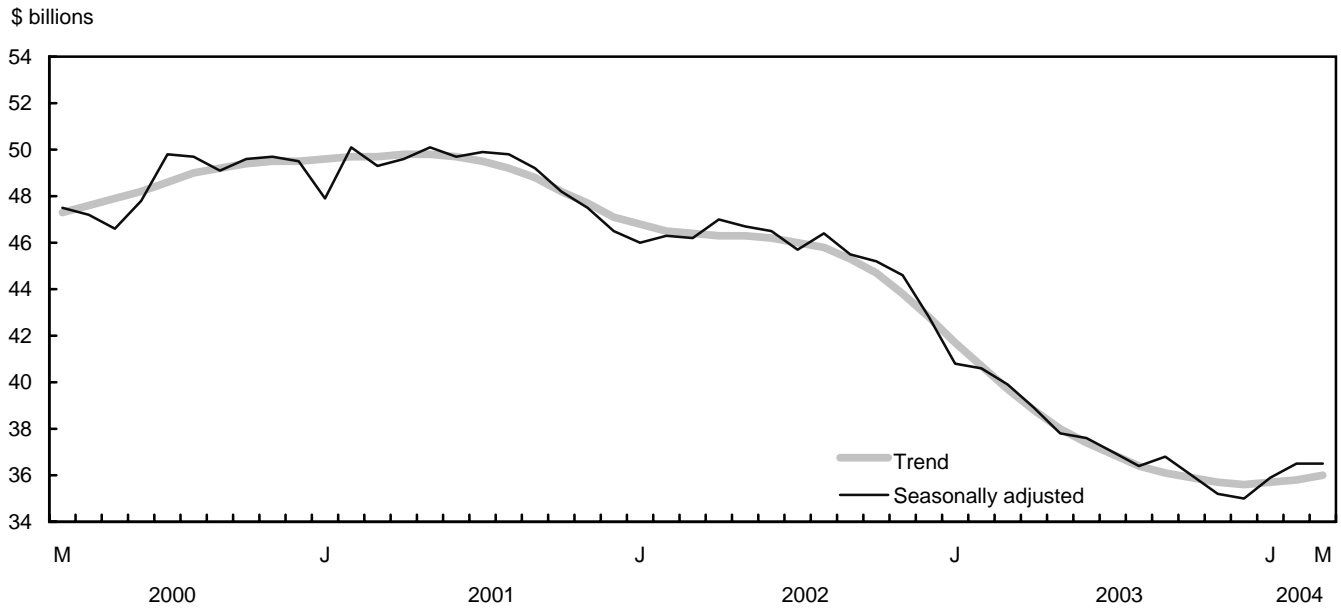
Unfilled orders increased 0.2% to \$36.5 billion in March, the third monthly rise in a row, and the longest string of consecutive increases since 1999.

Fabricated metal products (+3.8%) and machinery (+2.9%) were the key movers in March, as both industries extended their recent gains of orders by another month. Heavy-duty truck manufacturers' helped boost unfilled orders of motor vehicles by 17.8%. Pent-up demand for large trucks, particularly from the United States, and excellent financing options contributed to the recent gains.

Partly offsetting March's rise was a 4.6% decline in unfilled orders by the aerospace products and parts industry. Orders fell back to \$12.0 billion, following several new contract signings in recent months.

Chart 4

**Manufacturers continue to accumulate unfilled orders**



**New orders rise four months straight**

Improving demand at home and abroad contributed to manufacturers' fourth consecutive rise in new orders. In March, new orders jumped 2.4% to \$47.8 billion, the highest level since November 2000, just prior to the high-tech crash and the slowdown of the economy in 2001.

Solid increases were reported by the motor vehicle, computer and primary metals industries.

Chart 5

Inventories - Monthly change in trend

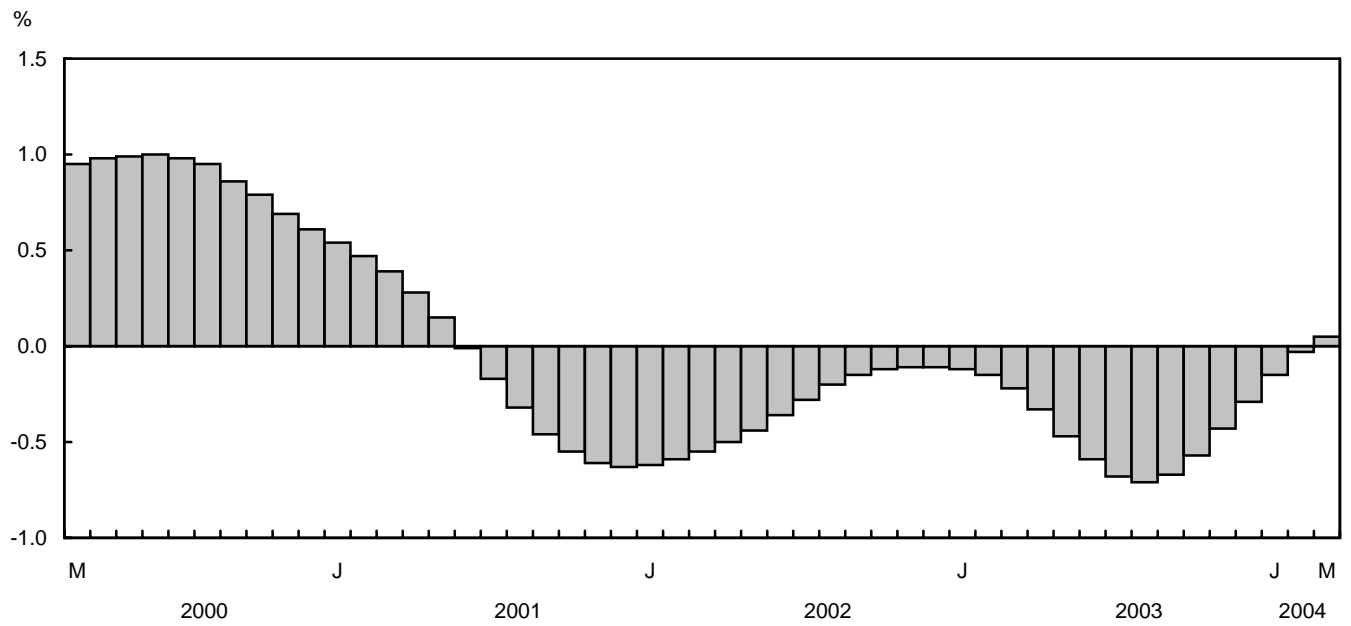


Chart 6

Shipments - Monthly change in trend

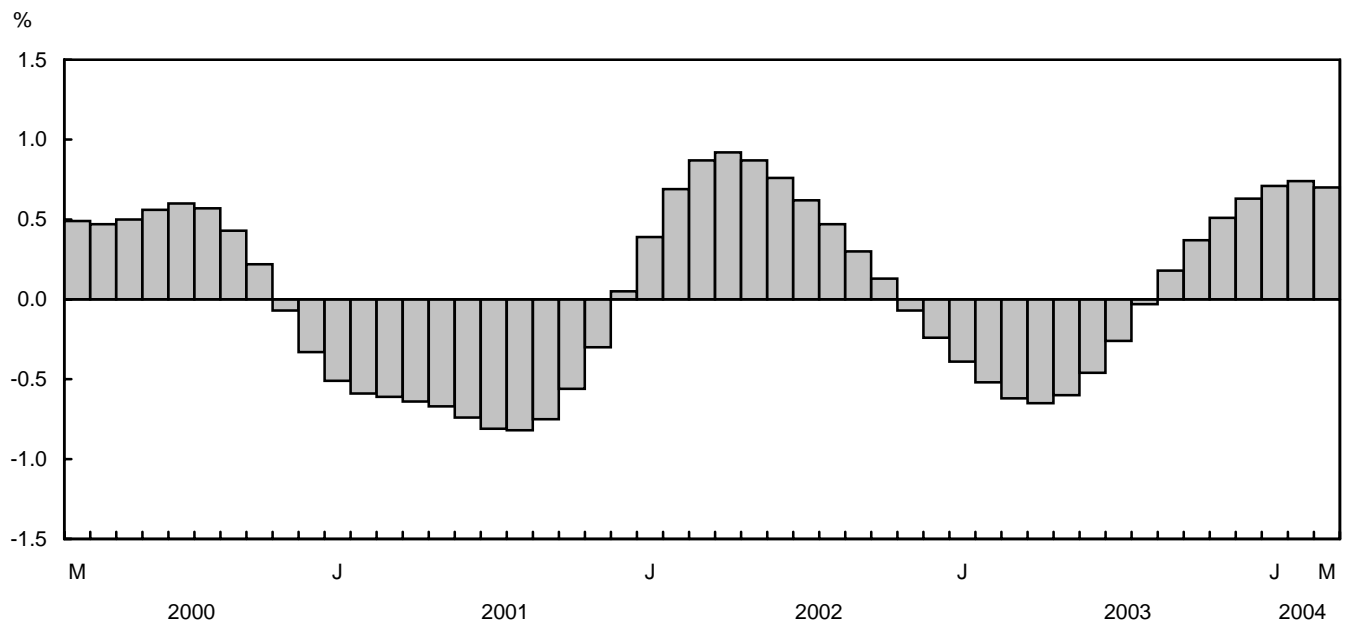
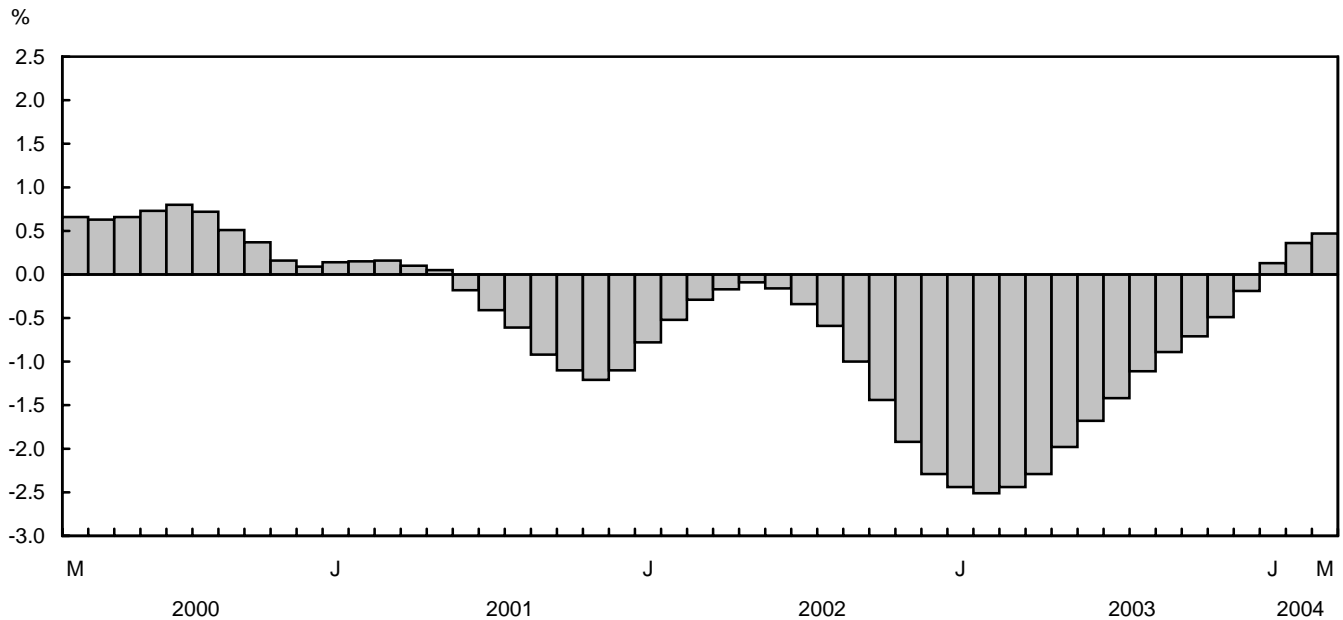


Chart 7

## Unfilled orders - Monthly change in trend



## Note to readers

Starting with the January 2004 release, estimates of shipments, inventories and orders have been revised back to January 1999. Although the historical month-to-month movements were preserved, there were adjustments made to the levels of the Monthly Survey of Manufacturing (MSM).

These adjustments were as a result of several factors: the use of new and revised data; updates to the industrial classification (NAICS); the updating of the seasonal adjustment factors; and most significantly, the benchmarking of the MSM to the 2000 and 2001 Annual Survey of Manufactures levels.

The average level of adjustment for shipments from reference year 1999 to 2003 was approximately +5.5%.

For more detailed information on the revision process, please refer to the MSM's concepts, methods and data quality report.

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

**Durable goods industries** include 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 orders 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 incorrect since the new orders variable includes orders that have already been shipped. The month-to-month change in new orders may be volatile, 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.

## Related products

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### Selected publications from Statistics Canada

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31-203-XPB	Manufacturing industries of Canada, national and provincial areas
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### A note on CANSIM

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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.

### Selected CANSIM tables from Statistics Canada

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304-0014	Manufacturers' shipments, inventories, orders and inventory to shipment ratios, by North American Industry Classification System (NAICS), Canada
304-0015	Manufacturing shipments, by North American Industry Classification System (NAICS) and province
377-0008	Real manufacturing shipments, orders, inventory owned and inventory/shipment ratio, 1997 dollars, seasonally adjusted
302-0007	Business conditions survey, by North American Industrial Classification System (NAICS), manufacturing industries, Canada
302-0008	Business conditions survey, Canadian manufacturing industries, by province
028-0002	Industrial capacity utilization rates, by North American Industry Classification System (NAICS)

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### Selected surveys from Statistics Canada

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2101	Monthly Survey of Manufacturing
2152	Business Conditions Survey (BCS)
2821	Capacity Utilization Rates

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## **Selected tables of Canadian statistics from Statistics Canada**

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- *Canadian Statistics - Manufacturing shipments, provinces and territories, monthly*
- *Canadian Statistics - Manufacturing shipments by industry groups (monthly)*
- *Economic indicators - Canada*
- *Canadian Statistics - Manufacturing shipments*
- *Canadian Statistics - Manufacturing shipments, provinces and territories*
- *Canadian Statistics - Business condition survey of the manufacturing sector*
- *Canadian Statistics - Business condition survey of the manufacturing sector, provinces*
- *Canadian Statistics - Industrial capacity utilization rates*

# Statistical Tables

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Table 1-1

## All manufacturing industries - Shipments, inventories and orders

Period	Unadjusted				Seasonally adjusted			
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders
	\$ millions							
March 2003	48,277	62,922	39,742	47,595	46,832	61,625	39,853	46,126
April 2003	45,978	62,694	38,560	44,795	45,287	61,789	38,866	44,300
May 2003	47,564	61,680	38,025	47,029	44,879	61,243	37,811	43,824
June 2003	46,387	60,282	37,581	45,943	44,569	60,481	37,576	44,335
July 2003	41,706	59,485	37,357	41,482	45,735	60,129	37,020	45,179
August 2003	43,610	59,420	36,817	43,069	43,290	59,541	36,433	42,702
September 2003	47,961	58,801	37,228	48,372	45,818	59,307	36,838	46,223
October 2003	48,508	58,200	36,005	47,286	45,373	58,748	35,984	44,519
November 2003	44,983	58,646	35,049	44,027	44,993	58,708	35,204	44,213
December 2003	42,991	57,195	34,653	42,595	45,678	58,301	35,020	45,493
January 2004	42,377	58,231	35,590	43,314	45,669	58,534	35,943	46,592
February 2004	43,736	59,830	36,401	44,547	46,152	58,673	36,456	46,665
March 2004	51,669	60,154	36,493	51,761	47,708	58,828	36,522	47,774

Table 1-2

## All manufacturing industries - Month to month % change and trend

Period	Month to month % change				Inventory to shipments ratio		Month to month % change			
	Shipments		Inventories				Unfilled orders		New orders	
	Seasonally adjusted	Trend	Seasonally adjusted	Trend			Seasonally adjusted	Trend	Seasonally adjusted	Trend
March 2003	0.8	-0.6	0.4	-0.2	1.32	1.34	-1.7	-2.4	-0.2	-0.5
April 2003	-3.3	-0.7	0.3	-0.3	1.36	1.34	-2.5	-2.3	-4.0	-0.5
May 2003	-0.9	-0.6	-0.9	-0.5	1.36	1.34	-2.7	-2.0	-1.1	-0.3
June 2003	-0.7	-0.5	-1.2	-0.6	1.36	1.34	-0.6	-1.7	1.2	-0.2
July 2003	2.6	-0.3	-0.6	-0.7	1.31	1.34	-1.5	-1.4	1.9	0.0
August 2003	-5.3	0.0	-1.0	-0.7	1.38	1.33	-1.6	-1.1	-5.5	0.2
September 2003	5.8	0.2	-0.4	-0.7	1.29	1.32	1.1	-0.9	8.2	0.4
October 2003	-1.0	0.4	-0.9	-0.6	1.29	1.30	-2.3	-0.7	-3.7	0.5
November 2003	-0.8	0.5	-0.1	-0.4	1.30	1.29	-2.2	-0.5	-0.7	0.7
December 2003	1.5	0.6	-0.7	-0.3	1.28	1.28	-0.5	-0.2	2.9	0.9
January 2004	0.0	0.7	0.4	-0.1	1.28	1.27	2.6	0.1	2.4	1.0
February 2004	1.1	0.7	0.2	0.0	1.27	1.26	1.4	0.4	0.2	0.9
March 2004	3.4	0.7	0.3	0.0	1.23	1.25	0.2	0.5	2.4	0.8

Table 2-1

## Motor vehicle, and parts and accessories industries - Shipments, inventories and orders

Period	Unadjusted				Seasonally adjusted			
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders
	\$ millions							
March 2003	9,594	3,210	1,665	9,551	8,914	3,165	1,679	8,883
April 2003	9,175	3,236	1,576	9,085	8,527	3,223	1,645	8,493
May 2003	9,387	3,223	1,554	9,365	8,498	3,189	1,587	8,440
June 2003	9,004	3,079	1,548	8,998	8,306	3,143	1,592	8,311
July 2003	5,724	3,055	1,561	5,737	8,911	3,144	1,575	8,894
August 2003	7,339	3,005	1,617	7,395	7,307	3,033	1,614	7,346
September 2003	8,696	3,167	1,649	8,728	8,337	3,164	1,624	8,347
October 2003	9,022	3,082	1,710	9,083	8,286	3,110	1,680	8,342
November 2003	8,116	3,166	1,771	8,177	7,980	3,093	1,730	8,030
December 2003	7,139	3,001	1,797	7,165	8,233	3,067	1,765	8,267
January 2004	7,785	3,094	1,825	7,814	8,204	3,055	1,800	8,239
February 2004	8,330	3,281	1,873	8,377	8,067	3,198	1,857	8,125
March 2004	10,193	3,436	1,969	10,289	8,598	3,370	1,973	8,714

Table 2-2

## Motor vehicle, and parts and accessories industries - Month to month % change and trend

Period	Month to month % change				Inventory to shipments ratio		Month to month % change			
	Shipments		Inventories				Unfilled orders		New orders	
	Seasonally adjusted	Trend	Seasonally adjusted	Trend			Seasonally adjusted	Trend	Seasonally adjusted	Trend
March 2003	3.5	-0.8	0.3	0.2	0.36	0.37	-1.8	-2.0	3.3	-0.8
April 2003	-4.3	-0.9	1.8	0.0	0.38	0.37	-2.1	-1.9	-4.4	-0.8
May 2003	-0.4	-0.9	-1.1	-0.1	0.38	0.37	-3.5	-1.4	-0.6	-0.8
June 2003	-2.2	-0.9	-1.5	-0.2	0.38	0.38	0.3	-0.7	-1.5	-0.8
July 2003	7.3	-0.8	0.1	-0.2	0.35	0.38	-1.1	0.1	7.0	-0.7
August 2003	-18.0	-0.7	-3.5	-0.2	0.42	0.38	2.5	0.9	-17.4	-0.5
September 2003	14.1	-0.5	4.3	-0.2	0.38	0.38	0.7	1.5	13.6	-0.3
October 2003	-0.6	-0.3	-1.7	-0.1	0.38	0.38	3.5	2.1	-0.1	-0.2
November 2003	-3.7	-0.1	-0.5	0.0	0.39	0.38	3.0	2.6	-3.7	0.0
December 2003	3.2	0.1	-0.8	0.2	0.37	0.38	2.0	3.0	3.0	0.2
January 2004	-0.3	0.4	-0.4	0.4	0.37	0.38	2.0	3.1	-0.3	0.4
February 2004	-1.7	0.7	4.7	0.5	0.40	0.38	3.2	2.8	-1.4	0.6
March 2004	6.6	0.9	5.4	0.6	0.39	0.38	6.2	2.2	7.2	0.8

Table 3-1

**All manufacturing industries except motor vehicle, parts and accessories industries - Shipments, inventories and orders**

Period	Unadjusted				Seasonally adjusted			
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders
	\$ millions							
March 2003	38,684	59,712	38,077	38,045	37,918	58,460	38,174	37,243
April 2003	36,803	59,458	36,984	35,710	36,760	58,565	37,221	35,808
May 2003	38,176	58,457	36,472	37,664	36,382	58,053	36,223	35,383
June 2003	37,383	57,203	36,034	36,945	36,263	57,338	35,984	36,024
July 2003	35,982	56,430	35,796	35,745	36,823	56,984	35,446	36,285
August 2003	36,271	56,416	35,199	35,674	35,982	56,508	34,819	35,356
September 2003	39,265	55,633	35,579	39,644	37,482	56,143	35,213	37,876
October 2003	39,487	55,118	34,295	38,203	37,087	55,638	34,303	36,177
November 2003	36,867	55,480	33,278	35,850	37,013	55,615	33,474	36,183
December 2003	35,852	54,194	32,856	35,430	37,445	55,234	33,255	37,226
January 2004	34,591	55,137	33,765	35,500	37,464	55,479	34,143	38,352
February 2004	35,406	56,549	34,528	36,170	38,085	55,475	34,598	38,540
March 2004	41,475	56,718	34,524	41,471	39,109	55,457	34,549	39,060

Table 3-2

**All manufacturing industries except motor vehicle, parts and accessories industries - Month to month % change and trend**

Period	Month to month % change				Inventory to shipments ratio		Month to month % change			
	Shipments		Inventories				Unfilled orders		New orders	
	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend
March 2003	0.2	-0.6	0.4	-0.2	1.54	1.56	-1.7	-2.5	-1.1	-0.4
April 2003	-3.1	-0.6	0.2	-0.4	1.59	1.57	-2.5	-2.3	-3.9	-0.4
May 2003	-1.0	-0.5	-0.9	-0.5	1.60	1.57	-2.7	-2.0	-1.2	-0.2
June 2003	-0.3	-0.4	-1.2	-0.6	1.58	1.56	-0.7	-1.7	1.8	0.0
July 2003	1.5	-0.1	-0.6	-0.7	1.55	1.56	-1.5	-1.5	0.7	0.1
August 2003	-2.3	0.1	-0.8	-0.7	1.57	1.54	-1.8	-1.2	-2.6	0.4
September 2003	4.2	0.3	-0.6	-0.7	1.50	1.53	1.1	-1.0	7.1	0.5
October 2003	-1.1	0.5	-0.9	-0.6	1.50	1.51	-2.6	-0.8	-4.5	0.7
November 2003	-0.2	0.7	0.0	-0.5	1.50	1.49	-2.4	-0.6	0.0	0.8
December 2003	1.2	0.8	-0.7	-0.3	1.48	1.48	-0.7	-0.4	2.9	1.0
January 2004	0.1	0.8	0.4	-0.2	1.48	1.46	2.7	0.0	3.0	1.1
February 2004	1.7	0.8	0.0	-0.1	1.46	1.45	1.3	0.2	0.5	1.0
March 2004	2.7	0.7	0.0	0.0	1.42	1.44	-0.1	0.4	1.4	0.8

Table 4-1

## Shipments by major group and selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% change from 2003	2004	% change from 2002	2003
\$millions											
Food manufacturing	311	5,554	5,010	5,000	5,407	5,137	4,686	6.6	15,564	1.7	63,436
Beverage and tobacco product manufacturing	312	997	782	733	1,064	955	787	1.4	2,512	3.2	12,032
Textile mills	313	301	263	254	249	317	274	-5.7	818	-11.0	3,421
Textile product mills	314	187	166	170	162	199	188	-7.7	524	-10.3	2,297
Clothing manufacturing	315	625	566	519	476	628	596	-3.9	1,710	-6.3	7,075
Leather and allied product manufacturing	316	54	48	45	54	57	52	-8.1	147	-13.7	743
Wood product manufacturing	321	3,106	2,553	2,266	2,199	2,547	2,366	9.0	7,925	-3.4	31,248
Paper manufacturing	322	2,928	2,567	2,546	2,531	2,982	2,664	-5.1	8,041	-3.6	33,204
Printing and related support activities	323	1,079	899	852	951	1,046	888	-0.7	2,830	-0.7	11,590
Petroleum and coal products manufacturing	324	3,471	3,208	3,172	3,006	3,746	3,366	-5.6	9,850	9.0	37,355
Chemical manufacturing	325	3,900	3,334	3,301	3,291	3,691	3,283	0.8	10,535	3.6	41,187
Plastics and rubber products manufacturing	326	2,300	1,936	1,813	1,759	2,108	1,898	0.9	6,049	1.0	24,722
Non-metallic mineral product manufacturing	327	918	732	655	778	818	687	4.5	2,305	5.3	11,994
Primary metal manufacturing	331	4,020	3,311	3,267	3,184	3,323	3,119	8.4	10,598	2.3	37,606
Fabricated metal product manufacturing	332	2,946	2,430	2,250	2,342	2,577	2,333	4.3	7,625	0.4	31,026
Machinery manufacturing	333	2,376	1,987	1,979	2,167	2,313	2,001	0.2	6,343	-2.9	25,576
Computer and electronic product manufacturing	334	1,974	1,534	1,355	1,910	1,694	1,417	7.5	4,862	-13.1	18,790
Electrical equipment, appliance and component manufacturing	335	983	825	757	791	889	771	4.8	2,565	-5.7	9,984
Transportation equipment manufacturing	336	11,960	9,921	9,776	8,927	11,418	10,318	-2.2	31,657	-3.9	120,949
Motor vehicle manufacturing	3361	7,031	5,609	5,259	4,818	6,734	6,126	-5.0	17,898	-6.4	69,258
Motor vehicle body and trailer manufacturing	3362	331	280	284	286	355	285	-5.4	895	0.1	3,695
Motor vehicle parts manufacturing	3363	3,163	2,721	2,527	2,321	2,859	2,679	2.1	8,410	-0.1	31,433
Aerospace product and parts manufacturing	3364	969	873	1,243	1,085	972	861	5.5	3,085	1.5	11,586
Railroad rolling stock manufacturing	3365	188	190	164	201	240	186	-23.7	543	-7.7	2,370
Ship and boat building	3366	110	102	89	95	114	86	8.5	302	-5.4	1,100
Furniture and related product manufacturing	337	1,271	1,094	1,146	1,092	1,209	1,106	1.8	3,510	1.2	14,035
Miscellaneous manufacturing	339	718	570	522	650	625	584	3.1	1,810	3.5	7,495
<b>Non-durable goods industries<sup>1</sup></b>		<b>21,397</b>	<b>18,780</b>	<b>18,403</b>	<b>18,950</b>	<b>20,865</b>	<b>18,681</b>	<b>-0.1</b>	<b>58,580</b>	<b>1.5</b>	<b>237,062</b>
<b>Durable goods industries<sup>2</sup></b>		<b>30,271</b>	<b>24,956</b>	<b>23,973</b>	<b>24,041</b>	<b>27,413</b>	<b>24,701</b>	<b>2.3</b>	<b>79,201</b>	<b>-2.6</b>	<b>308,703</b>
<b>Manufacturing</b>		<b>51,669</b>	<b>43,736</b>	<b>42,377</b>	<b>42,991</b>	<b>48,277</b>	<b>43,382</b>	<b>1.3</b>	<b>137,781</b>	<b>-0.8</b>	<b>545,765</b>

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326

2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339

Table 4-2

## Shipments by major group and selected industries - Seasonally adjusted

	NAICS Code	Change from February	Current periods				Change from previous month			Trend change from previous month			
			Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2004	Feb. 2004	Jan. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003
			\$ millions				percentage						
Food manufacturing	311	102	5,608	5,506	5,542	5,362	1.8	-0.6	3.4	0.5	0.7	0.8	0.9
Beverage and tobacco product manufacturing	312	44	1,029	986	999	1,003	4.4	-1.3	-0.4	0.0	0.0	-0.1	-0.1
Textile mills	313	5	278	273	276	282	1.9	-0.9	-2.2	-0.1	-0.1	-0.2	-0.2
Textile product mills	314	1	180	179	190	180	0.4	-6.1	5.6	-0.3	-0.4	-0.5	-0.7
Clothing manufacturing	315	10	570	560	594	591	1.7	-5.8	0.6	-0.3	-0.3	-0.2	-0.2
Leather and allied product manufacturing	316	-1	59	60	58	67	-2.1	3.4	-12.9	-0.7	-0.5	-0.3	0.0
Wood product manufacturing	321	144	2,891	2,746	2,632	2,599	5.2	4.4	1.3	0.2	0.3	0.3	0.4
Paper manufacturing	322	105	2,780	2,675	2,614	2,636	3.9	2.3	-0.9	1.0	0.9	0.5	-0.1
Printing and related support activities	323	-6	965	971	940	969	-0.6	3.3	-2.9	0.2	0.3	0.4	0.4
Petroleum and coal products manufacturing	324	85	3,398	3,313	3,188	3,021	2.6	3.9	5.5	2.0	2.2	2.2	1.9
Chemical manufacturing	325	58	3,576	3,519	3,464	3,475	1.6	1.6	-0.3	0.8	1.0	1.0	0.9
Plastics and rubber products manufacturing	326	65	2,137	2,073	2,054	2,092	3.1	0.9	-1.8	0.5	0.5	0.4	0.4
Non-metallic mineral product manufacturing	327	22	1,059	1,038	982	1,014	2.1	5.7	-3.2	0.9	0.9	0.9	0.7
Primary metal manufacturing	331	186	3,571	3,385	3,294	3,269	5.5	2.7	0.8	1.9	2.1	2.1	2.0
Fabricated metal product manufacturing	332	145	2,785	2,640	2,481	2,670	5.5	6.4	-7.1	0.1	0.3	0.5	0.6
Machinery manufacturing	333	14	2,122	2,108	2,126	2,098	0.7	-0.9	1.3	-0.2	-0.3	-0.3	-0.3
Computer and electronic product manufacturing	334	13	1,707	1,695	1,550	1,648	0.7	9.3	-5.9	1.1	1.3	1.5	1.6
Electrical equipment, appliance and component manufacturing	335	9	872	863	836	849	1.0	3.2	-1.6	0.5	0.6	0.6	0.7
Transportation equipment manufacturing	336	473	10,271	9,797	10,006	9,961	4.8	-2.1	0.5	0.6	0.4	0.3	0.1
Motor vehicle manufacturing	3361	442	5,339	5,397	5,582	5,528	8.2	-3.3	1.0	1.1	0.7	0.2	-0.1
Motor vehicle body and trailer manufacturing	3362	-10	289	299	299	309	-3.3	-0.1	-3.2	-0.7	-0.8	-0.7	-0.6
Motor vehicle parts manufacturing	3363	89	2,759	2,670	2,622	2,705	3.3	1.8	-3.1	0.6	0.6	0.6	0.6
Aerospace product and parts manufacturing	3364	-34	961	995	1,025	984	-3.4	-2.9	4.1	-0.4	-0.3	-0.2	-0.1
Railroad rolling stock manufacturing	3365	-31	159	191	169	207	-16.4	13.0	-18.4	-2.2	-1.8	-0.9	0.1
Ship and boat building	3366	-6	95	100	99	107	-5.7	1.3	-7.4	-0.1	0.4	1.2	2.0
Furniture and related product manufacturing	337	28	1,186	1,158	1,226	1,202	2.4	-5.5	1.9	0.3	0.4	0.5	0.5
Miscellaneous manufacturing	339	56	664	609	616	689	9.2	-1.1	-10.7	0.8	0.8	0.7	0.5
<b>Non-durable goods industries <sup>1</sup></b>		<b>456</b>	<b>20,010</b>	<b>19,554</b>	<b>19,325</b>	<b>19,088</b>	<b>2.3</b>	<b>1.2</b>	<b>1.2</b>	<b>0.8</b>	<b>0.9</b>	<b>0.9</b>	<b>0.8</b>
<b>Durable goods industries <sup>2</sup></b>		<b>1,100</b>	<b>27,697</b>	<b>26,598</b>	<b>26,344</b>	<b>26,590</b>	<b>4.1</b>	<b>1.0</b>	<b>-0.9</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.5</b>
<b>Manufacturing</b>		<b>1,556</b>	<b>47,708</b>	<b>46,152</b>	<b>45,669</b>	<b>45,678</b>	<b>3.4</b>	<b>1.1</b>	<b>0.0</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.6</b>

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326

2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339

Table 5-1

## Inventories by major group and selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% change from 2003	Average 2004	% change from 2002	2003
\$millions											
Food manufacturing	311	4,695	4,621	4,579	4,527	4,599	4,569	1.2	4,632	0.2	4,564
Beverage and tobacco product manufacturing	312	1,682	1,653	1,595	1,544	1,696	1,687	-1.8	1,643	2.7	1,650
Textile mills	313	469	469	473	474	538	529	-11.6	471	-8.0	519
Textile product mills	314	360	353	353	349	382	370	-4.1	355	-4.2	365
Clothing manufacturing	315	1,345	1,348	1,353	1,331	1,447	1,440	-6.3	1,349	0.9	1,451
Leather and allied product manufacturing	316	116	114	117	117	134	136	-13.9	116	-9.8	141
Wood product manufacturing	321	5,141	4,942	4,449	4,165	5,636	5,314	-8.0	4,844	-0.9	4,533
Paper manufacturing	322	3,539	3,536	3,486	3,486	3,657	3,623	-2.5	3,521	-1.1	3,588
Printing and related support activities	323	875	867	847	848	904	850	0.5	863	-2.4	870
Petroleum and coal products manufacturing	324	2,221	2,085	1,997	1,841	2,027	2,042	3.6	2,101	0.8	2,009
Chemical manufacturing	325	6,248	6,141	5,966	5,749	5,798	5,565	10.0	6,119	9.3	5,652
Plastics and rubber products manufacturing	326	2,318	2,317	2,278	2,219	2,372	2,275	0.0	2,305	4.4	2,279
Non-metallic mineral product manufacturing	327	1,155	1,155	1,140	1,094	1,151	1,139	0.8	1,150	-0.2	1,125
Primary metal manufacturing	331	4,496	4,630	4,688	4,666	5,006	5,089	-9.1	4,605	-1.5	4,902
Fabricated metal product manufacturing	332	3,661	3,601	3,537	3,390	3,799	3,759	-3.9	3,600	1.3	3,676
Machinery manufacturing	333	4,539	4,541	4,452	4,389	4,523	4,591	-1.2	4,510	-3.2	4,522
Computer and electronic product manufacturing	334	3,863	4,176	4,173	4,037	4,465	4,671	-11.5	4,071	-11.3	4,398
Electrical equipment, appliance and component manufacturing	335	1,816	1,808	1,778	1,719	1,984	1,882	-6.2	1,801	-2.8	1,870
Transportation equipment manufacturing	336	9,116	8,994	8,534	8,863	10,250	10,172	-12.3	8,882	-17.9	9,637
Motor vehicle manufacturing	3361	1,525	1,402	1,277	1,183	1,363	1,345	4.4	1,401	-8.6	1,288
Motor vehicle body and trailer manufacturing	3362	457	436	415	412	514	520	-12.6	436	12.3	466
Motor vehicle parts manufacturing	3363	1,911	1,879	1,817	1,818	1,847	1,869	0.5	1,869	13.1	1,847
Aerospace product and parts manufacturing	3364	4,244	4,327	4,010	4,399	5,228	5,237	-19.1	4,194	-30.5	4,875
Railroad rolling stock manufacturing	3365	714	673	746	740	1,000	900	-24.6	711	-7.5	876
Ship and boat building	3366	121	126	130	127	140	143	-12.4	126	-1.8	129
Furniture and related product manufacturing	337	1,211	1,194	1,183	1,179	1,307	1,266	-6.0	1,196	2.7	1,238
Miscellaneous manufacturing	339	1,288	1,283	1,252	1,207	1,247	1,214	3.6	1,274	4.1	1,217
<b>Non-durable goods industries<sup>1</sup></b>		<b>23,869</b>	<b>23,505</b>	<b>23,044</b>	<b>22,485</b>	<b>23,555</b>	<b>23,085</b>	<b>1.7</b>	<b>23,473</b>	<b>2.3</b>	<b>23,087</b>
<b>Durable goods industries<sup>2</sup></b>		<b>36,286</b>	<b>36,324</b>	<b>35,186</b>	<b>34,709</b>	<b>39,367</b>	<b>39,097</b>	<b>-7.7</b>	<b>35,932</b>	<b>-7.1</b>	<b>37,118</b>
<b>Manufacturing</b>		<b>60,154</b>	<b>59,830</b>	<b>58,231</b>	<b>57,195</b>	<b>62,922</b>	<b>62,182</b>	<b>-4.2</b>	<b>59,405</b>	<b>-3.7</b>	<b>60,205</b>

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326

2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339



Table 5-2

## Inventories by major group and selected industries - Seasonally adjusted

	NAICS Code	Change from February	Current periods				Change from previous month			Trend change from previous month			
			Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2004	Feb. 2004	Jan. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003
			\$ millions				percentage						
Food manufacturing	311	44	4,712	4,668	4,607	4,584	1.0	1.3	0.5	0.6	0.6	0.6	0.5
Beverage and tobacco product manufacturing	312	-3	1,640	1,643	1,619	1,627	-0.2	1.5	-0.5	0.0	0.0	-0.1	-0.1
Textile mills	313	8	466	458	471	479	1.8	-2.8	-1.6	-0.8	-1.3	-1.7	-2.0
Textile product mills	314	3	353	350	353	350	0.9	-0.8	0.8	0.0	-0.2	-0.4	-0.5
Clothing manufacturing	315	-9	1,365	1,374	1,386	1,391	-0.6	-0.9	-0.4	-0.3	-0.6	-0.8	-0.9
Leather and allied product manufacturing	316	-3	123	126	130	133	-2.4	-3.3	-2.1	-1.3	-1.5	-1.6	-1.6
Wood product manufacturing	321	-11	4,341	4,352	4,291	4,301	-0.2	1.4	-0.2	0.2	0.1	0.0	-0.4
Paper manufacturing	322	-17	3,475	3,493	3,504	3,561	-0.5	-0.3	-1.6	-0.4	-0.4	-0.5	-0.5
Printing and related support activities	323	-11	853	864	866	877	-1.3	-0.2	-1.2	-0.1	-0.1	-0.1	-0.2
Petroleum and coal products manufacturing	324	65	2,125	2,060	2,046	2,004	3.2	0.7	2.1	1.2	1.2	1.0	0.6
Chemical manufacturing	325	42	6,010	5,967	5,970	5,897	0.7	0.0	1.2	0.5	0.7	0.9	0.9
Plastics and rubber products manufacturing	326	-5	2,263	2,268	2,282	2,269	-0.2	-0.6	0.6	0.0	0.0	0.0	0.0
Non-metallic mineral product manufacturing	327	14	1,110	1,096	1,135	1,120	1.3	-3.5	1.4	-0.5	-0.5	-0.4	-0.3
Primary metal manufacturing	331	-79	4,603	4,682	4,686	4,574	-1.7	-0.1	2.4	0.0	-0.1	-0.3	-0.6
Fabricated metal product manufacturing	332	60	3,630	3,570	3,557	3,453	1.7	0.3	3.0	0.2	0.1	-0.2	-0.5
Machinery manufacturing	333	6	4,540	4,534	4,483	4,499	0.1	1.1	-0.4	0.3	0.3	0.3	0.2
Computer and electronic product manufacturing	334	-65	3,938	4,003	4,125	4,096	-1.6	-3.0	0.7	-0.9	-1.2	-1.3	-1.3
Electrical equipment, appliance and component manufacturing	335	6	1,800	1,793	1,808	1,777	0.3	-0.8	1.8	0.3	0.1	-0.1	-0.3
Transportation equipment manufacturing	336	88	9,013	8,924	8,771	8,874	1.0	1.8	-1.2	-0.3	-0.6	-0.9	-1.1
Motor vehicle manufacturing	3361	142	1,487	1,345	1,269	1,254	10.5	6.0	1.3	1.1	1.0	0.7	0.4
Motor vehicle body and trailer manufacturing	3362	7	430	424	429	428	1.6	-1.3	0.3	0.1	-0.2	-0.5	-0.9
Motor vehicle parts manufacturing	3363	30	1,884	1,853	1,786	1,813	1.6	3.8	-1.5	0.3	0.2	0.1	0.0
Aerospace product and parts manufacturing	3364	-106	4,236	4,342	4,250	4,332	-2.4	2.2	-1.9	-1.0	-1.3	-1.6	-1.7
Railroad rolling stock manufacturing	3365	42	714	673	746	740	6.2	-9.9	0.9	-0.7	-1.8	-3.0	-3.8
Ship and boat building	3366	-2	118	120	121	121	-1.9	-0.7	0.3	-0.8	-0.4	-0.2	0.0
Furniture and related product manufacturing	337	10	1,201	1,191	1,196	1,202	0.8	-0.4	-0.6	0.0	-0.2	-0.3	-0.4
Miscellaneous manufacturing	339	9	1,268	1,259	1,250	1,236	0.7	0.7	1.2	0.6	0.8	0.9	0.9
<b>Non-durable goods industries<sup>1</sup></b>		<b>123</b>	<b>22,020</b>	<b>21,896</b>	<b>21,848</b>	<b>21,779</b>	<b>0.6</b>	<b>0.2</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.2</b>
<b>Durable goods industries<sup>2</sup></b>		<b>31</b>	<b>36,808</b>	<b>36,777</b>	<b>36,687</b>	<b>36,522</b>	<b>0.1</b>	<b>0.2</b>	<b>0.5</b>	<b>-0.1</b>	<b>-0.2</b>	<b>-0.4</b>	<b>-0.6</b>
<b>Manufacturing</b>		<b>154</b>	<b>58,828</b>	<b>58,673</b>	<b>58,534</b>	<b>58,301</b>	<b>0.3</b>	<b>0.2</b>	<b>0.4</b>	<b>0.0</b>	<b>0.0</b>	<b>-0.1</b>	<b>-0.3</b>

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326

2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339

Table 6-1

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

NAICS Code	Current periods				Previous year		Year to date		Average per month		
	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	Average 2004	% Change from 2002	2003	
\$millions											
Textile mills	313	205	207	215	208	252	275	-21.9	209	-20.6	233
Textile product mills	314	93	86	84	74	103	102	-14.0	88	6.6	86
Clothing manufacturing	315	194	176	165	158	230	179	-8.3	179	3.6	199
Leather and allied product manufacturing	316	36	19	23	25	28	23	9.0	26	-2.2	28
Plastics and rubber products manufacturing	326	443	367	352	335	382	366	2.4	388	1.9	366
Primary metal manufacturing	331	1,917	1,879	1,735	1,706	1,787	1,826	2.1	1,844	-2.8	1,757
Fabricated metal product manufacturing	332	3,798	3,659	3,479	3,470	3,629	3,628	1.8	3,646	-1.7	3,522
Machinery manufacturing	333	4,669	4,538	4,444	4,363	4,639	4,602	-0.9	4,551	-14.5	4,380
Computer and electronic product manufacturing	334	3,124	3,181	3,424	3,178	3,744	3,713	-14.0	3,243	-5.5	3,483
Electrical equipment, appliance and component manufacturing	335	914	896	841	808	946	964	-8.1	884	-3.5	901
Transportation equipment manufacturing	336	18,468	18,893	18,316	17,922	21,510	22,294	-16.0	18,559	-26.7	20,074
Motor vehicle manufacturing	3361	750	637	644	593	591	627	9.7	677	-25.1	566
Motor vehicle body and trailer manufacturing	3362	498	465	432	376	465	490	-3.6	465	-1.5	430
Motor vehicle parts manufacturing	3363	1,220	1,237	1,182	1,204	1,075	1,082	11.0	1,213	25.4	1,093
Aerospace product and parts manufacturing	3364	11,858	12,418	11,698	11,525	14,491	15,044	-19.9	11,991	-34.2	13,167
Ship and boat building	3366	58	67	61	65	59	63	18.5	62	230.1	83
Miscellaneous manufacturing	339	183	170	157	158	145	149	12.1	170	-13.4	162
<b>Non-durable goods industries<sup>1</sup></b>		<b>2,007</b>	<b>1,851</b>	<b>1,825</b>	<b>1,735</b>	<b>2,029</b>	<b>2,032</b>	<b>-6.0</b>	<b>1,894</b>	<b>7.1</b>	<b>2,029</b>
<b>Durable goods industries<sup>2</sup></b>		<b>34,486</b>	<b>34,550</b>	<b>33,765</b>	<b>32,918</b>	<b>37,714</b>	<b>38,392</b>	<b>-10.3</b>	<b>34,267</b>	<b>-18.7</b>	<b>35,629</b>
<b>Manufacturing</b>		<b>36,493</b>	<b>36,401</b>	<b>35,590</b>	<b>34,653</b>	<b>39,742</b>	<b>40,424</b>	<b>-10.1</b>	<b>36,161</b>	<b>-17.7</b>	<b>37,658</b>

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326
2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339

Table 6-2

## Unfilled orders by selected major group and industries - Seasonally adjusted

NAICS Code	Change from February	Current periods				Change from previous month			Trend change from previous month							
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2004	Feb. 2004	Jan. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003				
\$ millions													percentage			
Textile mills	313	-1	195	196	210	215	-0.5	-6.8	-2.2	-0.7	-1.1	-1.4	-1.4			
Textile product mills	314	4	87	83	84	84	4.9	-0.9	0.0	1.6	1.4	1.3	1.3			
Clothing manufacturing	315	3	185	182	180	184	1.4	1.0	-2.1	-0.4	-0.7	-1.1	-1.4			
Leather and allied product manufacturing	316	9	34	25	31	32	35.5	-19.9	-1.7	3.0	2.7	2.5	2.7			
Plastics and rubber products manufacturing	326	65	446	381	365	362	17.0	4.5	0.6	1.2	1.2	1.2	1.2			
Primary metal manufacturing	331	35	1,851	1,816	1,771	1,782	1.9	2.5	-0.6	0.5	0.5	0.6	0.7			
Fabricated metal product manufacturing	332	140	3,798	3,659	3,479	3,470	3.8	5.2	0.3	1.4	1.5	1.3	0.9			
Machinery manufacturing	333	130	4,669	4,538	4,444	4,363	2.9	2.1	1.9	1.0	1.1	1.1	1.0			
Computer and electronic product manufacturing	334	-57	3,124	3,181	3,424	3,178	-1.8	-7.1	7.7	-0.7	-0.8	-0.8	-0.8			
Electrical equipment, appliance and component manufacturing	335	18	914	896	841	808	2.0	6.5	4.0	1.7	1.5	0.9	0.2			
Transportation equipment manufacturing	336	-411	18,564	18,975	18,537	18,053	-2.2	2.4	2.7	0.4	0.2	-0.1	-0.5			
Motor vehicle manufacturing	3361	113	750	637	644	593	17.8	-1.1	8.6	4.1	5.0	5.4	5.0			
Motor vehicle body and trailer manufacturing	3362	42	477	435	426	383	9.6	2.3	11.2	0.9	0.9	0.8	0.6			
Motor vehicle parts manufacturing	3363	2	1,223	1,221	1,156	1,172	0.2	5.6	-1.4	1.2	1.6	1.8	1.9			
Aerospace product and parts manufacturing	3364	-573	11,971	12,544	11,942	11,670	-4.6	5.0	2.3	0.6	0.5	0.2	-0.3			
Ship and boat building	3366	-10	59	69	71	76	-14.6	-3.0	-6.4	-4.1	-5.2	-5.7	-6.1			
Miscellaneous manufacturing	339	12	186	174	165	170	6.6	5.3	-2.8	1.8	1.6	1.2	0.8			
<b>Non-durable goods industries<sup>1</sup></b>		<b>118</b>	<b>1,798</b>	<b>1,680</b>	<b>1,675</b>	<b>1,628</b>	<b>7.0</b>	<b>0.3</b>	<b>2.9</b>	<b>1.0</b>	<b>0.1</b>	<b>-0.9</b>	<b>-2.2</b>			
<b>Durable goods industries<sup>2</sup></b>		<b>-51</b>	<b>34,724</b>	<b>34,776</b>	<b>34,268</b>	<b>33,392</b>	<b>-0.1</b>	<b>1.5</b>	<b>2.6</b>	<b>0.4</b>	<b>0.4</b>	<b>0.2</b>	<b>-0.1</b>			
<b>Manufacturing</b>		<b>67</b>	<b>36,522</b>	<b>36,456</b>	<b>35,943</b>	<b>35,020</b>	<b>0.2</b>	<b>1.4</b>	<b>2.6</b>	<b>0.5</b>	<b>0.4</b>	<b>0.1</b>	<b>-0.2</b>			

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326
2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339

Table 7-1

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

NAICS Code	Current periods				Previous year		Year to date		Annual		
	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	2004	% Change from 2002	2003	
\$millions											
Textile mills	313	299	256	260	251	294	273	-3.8	815	-13.6	3,356
Textile product mills	314	195	168	180	153	200	189	-7.9	543	-11.2	2,290
Clothing manufacturing	315	643	577	527	469	680	600	-5.3	1,747	-6.4	7,066
Leather and allied product manufacturing	316	71	44	43	54	62	54	-6.0	158	-12.6	747
Plastics and rubber products manufacturing	326	2,375	1,952	1,830	1,721	2,123	1,877	2.9	6,157	0.1	24,666
Primary metal manufacturing	331	4,059	3,454	3,296	3,131	3,283	3,140	10.6	10,809	0.8	37,522
Fabricated metal product manufacturing	332	3,085	2,610	2,259	2,322	2,579	2,476	5.5	7,954	0.7	31,096
Machinery manufacturing	333	2,507	2,081	2,061	2,375	2,351	2,066	4.2	6,649	-0.7	25,351
Computer and electronic product manufacturing	334	1,918	1,291	1,601	1,821	1,724	1,268	7.7	4,809	-17.1	18,169
Electrical equipment, appliance and component manufacturing	335	1,002	880	790	720	871	763	9.6	2,671	-6.8	9,835
Transportation equipment manufacturing	336	11,534	10,498	10,170	8,732	10,633	10,166	10.3	32,202	-6.3	114,188
Motor vehicle manufacturing	3361	7,144	5,602	5,310	4,849	6,698	6,120	-3.8	18,055	-6.5	69,172
Motor vehicle body and trailer manufacturing	3362	364	312	340	264	331	283	4.0	1,016	-2.2	3,637
Motor vehicle parts manufacturing	3363	3,146	2,776	2,504	2,316	2,852	2,640	2.3	8,426	-1.0	31,557
Aerospace product and parts manufacturing	3364	409	1,593	1,416	1,144	418	546	-16,989.6	3,418	-17.0	5,676
Ship and boat building	3366	101	108	86	82	110	114	-3.6	296	-3.2	1,134
Miscellaneous manufacturing	339	731	584	521	648	621	572	5.1	1,835	4.1	7,498
<b>Non-durable goods industries<sup>1</sup></b>		<b>21,554</b>	<b>18,806</b>	<b>18,493</b>	<b>18,813</b>	<b>20,861</b>	<b>18,729</b>	<b>0.0</b>	<b>58,853</b>	<b>1.4</b>	<b>236,934</b>
<b>Durable goods industries<sup>2</sup></b>		<b>30,207</b>	<b>25,741</b>	<b>24,821</b>	<b>23,782</b>	<b>26,734</b>	<b>24,623</b>	<b>8.3</b>	<b>80,769</b>	<b>-3.8</b>	<b>301,074</b>
<b>Manufacturing</b>		<b>51,761</b>	<b>44,547</b>	<b>43,314</b>	<b>42,595</b>	<b>47,595</b>	<b>43,352</b>	<b>4.7</b>	<b>139,622</b>	<b>-1.6</b>	<b>538,008</b>

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326
2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339

Table 7-2

## New orders by selected major group and industries - Seasonally adjusted

NAICS Code	Change from February	Current periods				Change from previous month			Trend change from previous month							
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2004	Feb. 2004	Jan. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003				
\$ millions													percentage			
Textile mills	313	18	277	259	271	279	7.1	-4.5	-2.8	0.2	0.0	-0.1	-0.3			
Textile product mills	314	6	184	178	190	178	3.1	-6.5	7.0	-0.2	-0.3	-0.5	-0.7			
Clothing manufacturing	315	10	572	562	590	586	1.8	-4.8	0.8	-0.1	-0.2	-0.1	-0.1			
Leather and allied product manufacturing	316	14	68	54	58	68	25.7	-6.4	-15.4	-0.5	-0.4	-0.3	-0.1			
Plastics and rubber products manufacturing	326	113	2,202	2,089	2,056	2,088	5.4	1.6	-1.5	0.5	0.5	0.4	0.4			
Primary metal manufacturing	331	177	3,606	3,430	3,283	3,238	5.2	4.5	1.4	1.9	2.0	2.0	1.9			
Fabricated metal product manufacturing	332	105	2,925	2,819	2,490	2,650	3.7	13.2	-6.0	0.1	0.6	1.0	1.3			
Machinery manufacturing	333	51	2,252	2,202	2,208	2,306	2.3	-0.3	-4.3	-0.4	-0.3	-0.1	0.1			
Computer and electronic product manufacturing	334	199	1,651	1,452	1,796	1,558	13.7	-19.2	15.3	1.3	1.4	1.4	1.5			
Electrical equipment, appliance and component manufacturing	335	-28	890	918	869	779	-3.0	5.6	11.5	0.7	1.2	1.3	1.3			
Transportation equipment manufacturing	336	-376	9,859	10,236	10,490	9,879	-3.7	-2.4	6.2	0.9	1.0	1.0	0.9			
Motor vehicle manufacturing	3361	562	5,952	5,390	5,633	5,559	10.4	-4.3	1.3	1.0	0.7	0.3	0.0			
Motor vehicle body and trailer manufacturing	3362	22	330	308	342	280	7.1	-9.8	22.1	-0.7	-0.6	-0.4	-0.2			
Motor vehicle parts manufacturing	3363	27	2,762	2,735	2,606	2,709	1.0	4.9	-3.8	0.4	0.5	0.6	0.6			
Aerospace product and parts manufacturing	3364	-1,208	389	1,597	1,296	1,147	-75.7	23.2	13.0	1.0	3.2	5.7	7.7			
Ship and boat building	3366	-14	85	98	94	102	-13.8	4.3	-7.6	0.8	1.1	2.0	2.5			
Miscellaneous manufacturing	339	58	676	617	611	697	9.5	1.1	-12.3	0.8	0.9	0.8	0.6			
<b>Non-durable goods industries<sup>1</sup></b>		<b>569</b>	<b>20,128</b>	<b>19,559</b>	<b>19,372</b>	<b>18,994</b>	<b>2.9</b>	<b>1.0</b>	<b>2.0</b>	<b>0.9</b>	<b>1.0</b>	<b>1.0</b>	<b>0.8</b>			
<b>Durable goods industries<sup>2</sup></b>		<b>541</b>	<b>27,646</b>	<b>27,105</b>	<b>27,220</b>	<b>26,499</b>	<b>2.0</b>	<b>-0.4</b>	<b>2.7</b>	<b>0.7</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>			
<b>Manufacturing</b>		<b>1,109</b>	<b>47,774</b>	<b>46,665</b>	<b>46,592</b>	<b>45,493</b>	<b>2.4</b>	<b>0.2</b>	<b>2.4</b>	<b>0.8</b>	<b>0.9</b>	<b>1.0</b>	<b>0.9</b>			

1. Non-durable goods industries include the following NAICS: 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326
2. Durable goods industries include the following NAICS: 321, 327, 331, 332, 333, 334, 335, 336, 337, 339

Table 8-1

## Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	2004	% Change from 2002	2003
\$ millions											
<b>311 Food manufacturing</b>											
Animal food manufacturing	3111	441	386	431	438	418	398	0.2	1,258	-1.9	5,099
Starch and vegetable fat and oil manufacturing	31122	354	262	268	278	266	230	21.9	884	11.4	3,117
Sugar and confectionery product manufacturing	3113	308	292	261	320	305	277	4.3	861	10.0	3,764
Fruit and vegetable preserving and specialty food manufacturing	3114	504	498	516	525	511	461	3.9	1,517	-0.9	5,974
Dairy product manufacturing	3115	945	864	868	938	871	795	8.3	2,678	9.8	10,958
Meat product manufacturing	3116	1,632	1,451	1,457	1,473	1,478	1,345	7.8	4,541	-3.9	17,027
Cookie, cracker and pasta manufacturing	31182	133	130	122	130	130	130	1.5	385	-2.1	1,577
Other food manufacturing	3119	436	383	360	438	392	340	9.5	1,179	4.1	4,936
<b>312 Beverage and tobacco product manufacturing</b>											
Soft drink and ice manufacturing	31211	274	220	195	295	270	211	2.2	689	12.7	3,336
Breweries	31212	350	252	237	391	279	219	18.8	840	1.0	3,858
Wineries	31213	68	52	43	62	53	44	20.4	162	-2.6	706
Distilleries	31214	48	37	42	58	77	69	-39.8	127	-18.0	831
Tobacco manufacturing	3122	257	220	215	259	276	244	-7.4	693	5.1	3,301
<b>313 Textile mills</b>											
Fibre, yarn and thread mills	3131	54	48	41	40	53	46	-0.1	143	-12.6	547
Fabric mills	3132	187	162	158	158	203	173	-8.6	507	-10.6	2,180
Textile and fabric finishing and fabric coating	3133	61	53	54	50	61	55	-1.3	168	-10.8	694
<b>314 Textile product mills</b>											
Carpet and rug mills	31411	67	64	59	59	76	69	-10.8	190	-8.6	824
Textile bag and canvas mills	31491	22	17	15	15	21	20	-6.5	53	-30.9	267
<b>315 Clothing manufacturing</b>											
Hosiery and sock mills	31511	35	36	36	40	42	36	-10.5	107	-5.1	511
Other clothing knitting mills	31519	45	41	41	47	39	43	1.9	127	-0.4	587
Men's and boys' cut and sew clothing manufacturing	31522	191	172	154	154	177	171	-0.4	516	-4.6	2,078
Women's and girls' cut and sew clothing manufacturing	31523	234	202	167	138	247	219	-8.3	603	-3.5	2,471
Clothing accessories and other clothing manufacturing	3159	21	20	21	21	23	21	-4.5	62	-4.1	289
<b>316 Leather and allied product manufacturing</b>											
Footwear manufacturing	3162	27	25	24	25	24	22	5.8	75	-17.7	401
<b>321 Wood product manufacturing</b>											
Sawmills and wood preservation	3211	1,476	1,200	1,086	1,001	1,319	1,218	-0.1	3,761	-16.1	14,961
Veneer, plywood and engineered wood product manufacturing	3212	899	750	623	617	563	532	39.1	2,272	19.5	7,928
Other wood product manufacturing	3219	731	603	557	581	665	616	1.2	1,891	6.2	8,359
<b>322 Paper manufacturing</b>											
Pulp, paper and paperboard mills	3221	2,028	1,778	1,744	1,757	2,037	1,805	-4.1	5,550	-6.6	22,490
Paperboard container manufacturing	32221	455	396	401	397	489	438	-9.0	1,252	6.6	5,538
Paper bag and coated and treated paper manufacturing	32222	259	228	226	210	282	259	-11.0	713	0.8	3,033
Other converted paper product manufacturing	32229	146	127	135	127	133	124	4.4	408	-2.7	1,624
<b>323 Printing and related support activities</b>											
Printing	32311	1,006	832	794	888	967	812	0.4	2,632	-1.5	10,730
Support activities for printing	32312	72	67	59	63	79	77	-12.8	198	10.5	860
<b>324 Petroleum and coal products manufacturing</b>											
Petroleum refineries	32411	3,298	3,040	2,985	2,824	3,562	3,193	-5.8	9,323	10.6	34,729
<b>325 Chemical manufacturing</b>											
Other basic inorganic chemical manufacturing	32518	289	248	264	256	259	250	5.7	801	12.8	3,023
Other basic organic chemical manufacturing	32519	347	295	300	294	337	283	-0.2	942	-6.6	3,423
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	738	632	608	608	723	625	-1.0	1,978	0.6	7,461
Pesticide and other agricultural chemical manufacturing	32532	101	62	44	9	80	42	31.9	207	21.2	444
Pharmaceutical and medicine manufacturing	3254	804	649	701	775	740	611	5.1	2,154	4.9	8,506
Paint and coating manufacturing	32551	196	159	138	133	176	143	6.3	492	3.5	2,028
Adhesive manufacturing	32552	73	58	58	51	62	56	11.4	189	8.4	772
Soap and cleaning compound manufacturing	32561	142	127	120	121	149	151	-15.6	388	-16.2	1,689
Toilet preparation manufacturing	32562	130	109	103	108	106	108	6.3	341	2.3	1,289
Printing ink manufacturing	32591	46	35	38	36	40	36	6.6	119	1.6	467
All other chemical product manufacturing	32599	373	333	323	321	349	332	1.9	1,030	2.8	3,989
<b>326 Plastics and rubber products manufacturing</b>											
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	167	132	111	106	146	134	-0.3	410	2.5	1,836
Polystyrene foam product manufacturing	32614	59	37	36	41	45	40	9.6	132	7.3	561
Other plastic product manufacturing	32619	1,101	917	830	834	971	866	2.6	2,848	2.5	11,881
Other rubber product manufacturing	32629	167	147	139	130	163	140	2.2	453	-11.6	1,750

Table 8-1 – continued

## Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	2004	% Change from 2002	2003
<b>327 Non-metallic mineral product manufacturing</b>											
Clay product and refractory manufacturing	3271	64	46	42	48	59	53	-6.6	152	5.4	722
Glass and glass product manufacturing	3272	181	152	148	128	169	143	2.6	481	0.0	2,084
Cement manufacturing	32731	98	74	58	84	82	61	12.8	229	1.2	1,479
Ready-mix concrete manufacturing	32732	192	148	108	162	147	111	23.2	448	5.1	2,761
Other concrete product manufacturing	32739	78	60	54	89	73	52	9.7	192	9.6	1,143
Abrasive product manufacturing	32791	24	20	18	19	31	27	-28.6	62	-13.5	294
All other non-metallic mineral product manufacturing	32799	149	125	124	136	125	120	6.1	398	12.3	1,683
<b>331 Primary metal manufacturing</b>											
Iron and steel mills and ferro-alloy manufacturing	3311	1,060	862	835	753	859	807	4.8	2,758	-1.3	9,877
Iron and steel pipes and tubes manufacturing from purchased steel	33121	342	273	295	243	261	255	15.8	910	6.2	2,908
Foundries	3315	304	259	241	226	290	258	-2.4	804	1.4	3,223
<b>332 Fabricated metal product manufacturing</b>											
Cutlery and hand tool manufacturing	3322	60	54	50	48	50	46	13.9	164	4.4	583
Plate work and fabricated structural product manufacturing	33231	459	360	331	404	380	323	6.5	1,149	4.6	4,928
Power boiler and heat exchanger manufacturing	33241	128	91	80	81	103	75	21.1	299	31.9	1,275
Spring and wire product manufacturing	3326	143	120	115	104	142	137	-11.1	378	-12.0	1,575
Coating, engraving, heat treating and allied activities	3328	311	248	235	224	275	262	-0.7	793	-0.6	3,043
Other fabricated metal product manufacturing	3329	321	275	233	243	306	280	-3.7	829	-6.5	3,486
<b>333 Machinery manufacturing</b>											
Agricultural implement manufacturing	33311	224	170	170	159	214	174	5.0	563	-12.0	1,956
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	204	193	195	192	198	178	5.4	592	-7.2	2,465
All other general-purpose machinery manufacturing	33399	205	158	170	181	231	150	-6.6	533	-1.9	2,336
<b>334 Computer and electronic product manufacturing</b>											
Computer and peripheral equipment manufacturing	3341	250	202	162	303	320	227	-18.2	614	-22.7	3,046
Communications equipment manufacturing	3342	728	537	439	741	551	452	16.5	1,704	-20.2	6,180
Audio and video equipment manufacturing	3343	23	14	14	20	16	18	-2.5	51	-12.2	211
<b>335 Electrical equipment, appliance and component manufacturing</b>											
Lighting fixture manufacturing	33512	87	72	66	70	79	72	-3.4	225	-9.3	968
Small electrical appliance manufacturing	33521	27	22	25	21	22	17	20.8	74	-1.7	263
Major appliance manufacturing	33522	175	143	138	119	158	146	1.8	456	-3.4	1,754
Battery manufacturing	33591	21	18	18	17	17	17	10.4	57	19.0	217
Communication and energy wire and cable manufacturing	33592	231	190	164	170	195	162	14.3	585	-14.5	2,170
All other electrical equipment and component manufacturing	33599	43	38	35	39	34	34	12.7	116	-0.1	429
<b>336 Transportation equipment manufacturing</b>											
Motor vehicle manufacturing	3361	7,031	5,609	5,259	4,818	6,734	6,126	-5.0	17,898	-6.4	69,258
Motor vehicle parts manufacturing	3363	3,163	2,721	2,527	2,321	2,859	2,679	2.1	8,410	-0.1	31,433
Aerospace product and parts manufacturing	3364	969	873	1,243	1,085	972	861	5.5	3,085	1.5	11,586
Railroad rolling stock manufacturing	3365	188	190	164	201	240	186	-23.7	543	-7.7	2,370
Ship and boat building	3366	110	102	89	95	114	86	8.5	302	-5.4	1,100
<b>337 Furniture and related product manufacturing</b>											
Household and institutional furniture and kitchen cabinet manufacturing	3371	699	625	649	625	644	613	4.3	1,974	-1.3	7,751
Office furniture (including fixtures) manufacturing	3372	468	384	411	386	474	413	-2.7	1,263	5.3	5,107
<b>339 Miscellaneous manufacturing</b>											
Medical equipment and supplies manufacturing	3391	275	216	197	220	195	173	28.7	688	10.7	2,287
Other miscellaneous manufacturing	3399	442	354	325	430	430	411	-8.1	1,122	0.6	5,208

Table 8-2

## Inventory owned for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
\$ millions											
<b>311 Food manufacturing</b>											
Animal food manufacturing	3111	292	292	276	276	291	282	2.5	287	4.2	281
Starch and vegetable fat and oil manufacturing	31122	241	270	234	213	195	217	20.8	248	4.6	180
Sugar and confectionery product manufacturing	3113	298	286	294	308	296	295	-2.2	293	5.0	310
Fruit and vegetable preserving and specialty food manufacturing	3114	863	864	891	910	825	844	3.5	873	5.3	853
Dairy product manufacturing	3115	893	882	850	807	859	834	4.3	875	-3.6	813
Meat product manufacturing	3116	798	770	736	706	850	841	-8.2	768	-5.5	797
Cookie, cracker and pasta manufacturing	31182	125	120	124	123	131	132	-6.5	123	7.1	128
Other food manufacturing	3119	489	471	474	470	431	432	11.5	478	2.9	455
<b>312 Beverage and tobacco product manufacturing</b>											
Soft drink and ice manufacturing	31211	247	227	217	205	249	238	-2.0	230	7.8	250
Breweries	31212	188	186	185	182	177	176	6.2	186	0.8	185
Wineries	31213	247	251	254	247	251	255	-0.8	251	4.8	251
Distilleries	31214	476	476	476	471	561	555	-14.6	476	3.3	528
Tobacco manufacturing	3122	524	513	462	439	458	463	10.5	500	-1.1	434
<b>313 Textile mills</b>											
Fibre, yarn and thread mills	3131	60	62	67	68	72	65	-6.7	63	0.3	69
Fabric mills	3132	335	336	335	338	393	390	-14.4	335	-12.3	378
Textile and fabric finishing and fabric coating	3133	75	72	72	68	73	74	-1.0	73	11.7	73
<b>314 Textile product mills</b>											
Carpet and rug mills	31411	88	88	86	86	109	103	-16.6	87	2.2	101
Textile bag and canvas mills	31491	37	37	39	38	46	45	-17.3	37	-32.1	42
<b>315 Clothing manufacturing</b>											
Hosiery and sock mills	31511	142	140	135	136	138	134	6.4	139	6.8	142
Other clothing knitting mills	31519	158	149	142	139	159	151	-0.1	149	6.1	164
Men's and boys' cut and sew clothing manufacturing	31522	429	451	450	456	532	509	-13.3	443	6.1	507
Women's and girls' cut and sew clothing manufacturing	31523	398	396	415	399	393	420	-4.0	403	1.0	416
Clothing accessories and other clothing manufacturing	3159	63	65	63	61	56	56	15.5	64	8.0	62
<b>316 Leather and allied product manufacturing</b>											
Footwear manufacturing	3162	70	67	70	71	84	83	-16.2	69	-7.3	92
<b>321 Wood product manufacturing</b>											
Sawmills and wood preservation	3211	3,197	3,067	2,700	2,490	3,643	3,403	-11.2	2,988	-5.3	2,769
Veneer, plywood and engineered wood product manufacturing	3212	891	857	778	725	913	873	-2.3	842	5.4	761
Other wood product manufacturing	3219	1,054	1,018	971	950	1,080	1,038	-2.3	1,014	8.0	1,003
<b>322 Paper manufacturing</b>											
Pulp, paper and paperboard mills	3221	2,484	2,488	2,444	2,448	2,564	2,546	-2.5	2,472	-3.1	2,508
Paperboard container manufacturing	32221	476	468	457	455	475	481	-1.3	467	2.8	479
Paper bag and coated and treated paper manufacturing	32222	370	374	388	383	405	393	-4.8	377	4.9	391
Other converted paper product manufacturing	32229	140	139	136	137	154	146	-5.7	138	0.9	146
<b>323 Printing and related support activities</b>											
Printing	32311	838	832	810	813	857	804	2.0	827	-0.5	832
Support activities for printing	32312	37	35	37	35	47	46	-24.3	36	-32.0	37
<b>324 Petroleum and coal products manufacturing</b>											
Petroleum refineries	32411	1,890	1,773	1,691	1,545	1,724	1,742	3.5	1,785	1.4	1,703
<b>325 Chemical manufacturing</b>											
Other basic inorganic chemical manufacturing	32518	245	250	246	250	233	227	8.4	247	8.7	243
Other basic organic chemical manufacturing	32519	362	329	303	314	365	344	-3.7	331	8.8	346
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	601	606	568	549	570	539	8.2	592	3.2	566
Pesticide and other agricultural chemical manufacturing	32532	130	110	96	88	87	80	35.0	112	29.1	84
Pharmaceutical and medicine manufacturing	3254	2,813	2,838	2,835	2,720	2,533	2,446	16.1	2,829	14.4	2,543
Paint and coating manufacturing	32551	282	277	269	249	275	265	4.4	276	2.8	268
Adhesive manufacturing	32552	104	104	99	100	94	89	13.5	102	12.8	95
Soap and cleaning compound manufacturing	32561	101	101	95	95	108	111	-11.0	99	-29.0	106
Toilet preparation manufacturing	32562	193	186	187	183	196	190	-2.6	189	8.6	194
Printing ink manufacturing	32591	88	87	78	83	67	72	18.3	84	12.0	74
All other chemical product manufacturing	32599	384	380	372	376	425	417	-9.2	379	1.3	399
<b>326 Plastics and rubber products manufacturing</b>											
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	351	341	322	295	378	364	-8.3	338	-8.5	340
Polystyrene foam product manufacturing	32614	60	55	55	51	60	55	-0.6	57	16.6	54
Other plastic product manufacturing	32619	951	961	947	918	980	925	1.0	953	7.4	938
Other rubber product manufacturing	32629	132	131	134	130	145	142	-7.6	132	-12.9	138

Table 8-2 – continued

## Inventory owned for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
<b>327 Non-metallic mineral product manufacturing</b>											
Clay product and refractory manufacturing	3271	76	75	68	67	83	80	-10.1	73	-8.1	76
Glass and glass product manufacturing	3272	253	253	249	247	256	252	-0.8	251	-2.1	252
Cement manufacturing	32731	203	210	197	174	206	206	-1.8	203	-6.8	182
Ready-mix concrete manufacturing	32732	82	84	84	83	85	84	-2.8	83	-7.7	87
Other concrete product manufacturing	32739	133	135	134	122	111	108	25.7	134	11.8	117
Abrasive product manufacturing	32791	51	50	50	48	67	70	-27.4	50	-19.4	61
All other non-metallic mineral product manufacturing	32799	127	130	130	129	136	133	-2.4	129	8.2	131
<b>331 Primary metal manufacturing</b>											
Iron and steel mills and ferro-alloy manufacturing	3311	1,614	1,746	1,830	1,855	1,972	2,078	-15.9	1,730	-1.8	1,950
Iron and steel pipes and tubes manufacturing from purchased steel	33121	429	473	523	478	518	491	-5.2	475	2.3	495
Foundries	3315	285	274	277	273	303	293	-5.6	279	1.6	291
<b>332 Fabricated metal product manufacturing</b>											
Cutlery and hand tool manufacturing	3322	84	84	82	80	88	87	-4.5	83	2.2	83
Plate work and fabricated structural product manufacturing	33231	730	681	658	613	679	664	4.4	690	-1.7	677
Power boiler and heat exchanger manufacturing	33241	90	89	88	83	106	100	-12.9	89	4.1	96
Spring and wire product manufacturing	3326	151	145	138	138	196	203	-28.1	145	-11.6	172
Coating, engraving, heat treating and allied activities	3328	167	176	164	167	180	187	-8.4	169	-1.9	169
Other fabricated metal product manufacturing	3329	610	596	610	571	581	570	5.4	605	6.5	579
<b>333 Machinery manufacturing</b>											
Agricultural implement manufacturing	33311	422	445	440	435	524	525	-17.1	436	1.2	474
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	311	306	298	300	314	316	-2.5	305	-7.2	324
All other general-purpose machinery manufacturing	33399	551	556	554	564	472	499	11.9	554	15.1	530
<b>334 Computer and electronic product manufacturing</b>											
Computer and peripheral equipment manufacturing	3341	571	566	577	557	673	702	-17.2	571	1.2	669
Communications equipment manufacturing	3342	2,035	2,294	2,307	2,217	2,435	2,593	-13.1	2,212	-12.2	2,387
Audio and video equipment manufacturing	3343	53	60	59	56	65	63	-9.3	57	5.0	59
<b>335 Electrical equipment, appliance and component manufacturing</b>											
Lighting fixture manufacturing	33512	137	142	136	134	152	150	-9.6	138	-9.1	141
Small electrical appliance manufacturing	33521	40	39	40	45	39	38	3.0	40	9.3	40
Major appliance manufacturing	33522	198	191	178	171	203	185	0.3	189	11.9	186
Battery manufacturing	33591	44	44	42	40	34	33	29.7	43	-10.8	37
Communication and energy wire and cable manufacturing	33592	780	785	773	736	862	794	-5.3	779	-0.1	808
All other electrical equipment and component manufacturing	33599	101	98	99	98	102	102	-3.0	99	-2.0	103
<b>336 Transportation equipment manufacturing</b>											
Motor vehicle manufacturing	3361	1,525	1,402	1,277	1,183	1,363	1,345	4.4	1,401	-8.6	1,288
Motor vehicle parts manufacturing	3363	1,911	1,879	1,817	1,818	1,847	1,869	0.5	1,869	13.1	1,847
Aerospace product and parts manufacturing	3364	4,244	4,327	4,010	4,399	5,228	5,237	-19.1	4,194	-30.5	4,875
Railroad rolling stock manufacturing	3365	714	673	746	740	1,000	900	-24.6	711	-7.5	876
Ship and boat building	3366	121	126	130	127	140	143	-12.4	126	-1.8	129
<b>337 Furniture and related product manufacturing</b>											
Household and institutional furniture and kitchen cabinet manufacturing	3371	778	764	763	748	855	828	-7.4	768	1.3	790
Office furniture (including fixtures) manufacturing	3372	323	319	317	327	331	322	-1.8	319	8.9	335
<b>339 Miscellaneous manufacturing</b>											
Medical equipment and supplies manufacturing	3391	296	309	311	298	232	244	27.4	305	13.0	255
Other miscellaneous manufacturing	3399	992	974	941	909	1,014	969	-2.2	969	2.0	962

Table 9

## Inventories owned by stage of fabrication

Period covered	Unadjusted				Seasonally adjusted			
	Raw materials	Goods in process	Finished products	Total Inventories	Raw materials	Goods in process	Finished products	Total Inventories
	\$ millions							
March 2003	27,171	14,471	21,280	62,922	26,484	14,341	20,801	61,625
April 2003	26,694	14,530	21,469	62,694	26,396	14,438	20,954	61,789
May 2003	25,843	14,491	21,346	61,680	26,047	14,259	20,937	61,243
June 2003	25,401	13,943	20,938	60,282	25,824	13,870	20,788	60,481
July 2003	25,574	13,406	20,505	59,485	25,873	13,602	20,654	60,129
August 2003	25,520	13,515	20,386	59,420	25,705	13,443	20,393	59,541
September 2003	25,155	13,396	20,250	58,801	25,527	13,401	20,379	59,307
October 2003	25,050	13,298	19,852	58,200	25,208	13,313	20,227	58,748
November 2003	24,917	13,593	20,136	58,646	25,053	13,459	20,196	58,708
December 2003	24,883	12,896	19,415	57,195	24,981	13,184	20,137	58,301
January 2004	25,507	12,990	19,734	58,231	25,249	13,233	20,052	58,534
February 2004	25,900	13,442	20,487	59,830	25,164	13,212	20,297	58,673
March 2004	25,999	13,352	20,803	60,154	25,371	13,233	20,224	58,828



Table 10

## Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	2004	% Change from 2002	2003
\$ millions										
<b>Total</b>										
Newfoundland and Labrador	199	178	172	203	166	148	15.2	549	12.5	2,827
Prince Edward Island	106	96	94	105	90	82	12.9	296	2.2	1,356
Nova Scotia	764	632	657	695	732	667	-1.1	2,053	2.7	8,524
New Brunswick	1,110	956	875	1,055	1,095	948	-3.7	2,941	2.7	12,864
Quebec	11,929	10,149	10,118	10,476	11,074	9,967	3.2	32,196	-1.3	128,514
Ontario	27,597	23,305	22,348	22,070	26,205	23,567	-0.9	73,250	-1.7	289,216
Manitoba	1,084	922	912	953	977	882	6.0	2,918	1.3	11,413
Saskatchewan	901	714	666	632	706	612	16.7	2,282	3.7	7,913
Alberta	4,475	3,767	3,736	3,874	4,094	3,622	4.2	11,977	5.0	45,838
British Columbia	3,497	3,012	2,793	2,920	3,134	2,883	4.4	9,302	-3.3	37,223
<b>311 Food manufacturing</b>										
Newfoundland and Labrador	55	51	53	66	49	48	12.6	159	-9.3	1,056
Prince Edward Island	69	61	63	72	62	54	8.0	193	-1.0	902
Nova Scotia	163	146	144	177	167	150	-1.8	453	-0.7	1,999
New Brunswick	132	117	122	153	110	101	14.2	371	0.6	2,035
Quebec	1,338	1,236	1,201	1,261	1,210	1,153	8.1	3,775	5.2	15,170
Ontario	2,174	1,999	1,990	2,197	2,069	1,851	5.9	6,163	1.9	25,005
Manitoba	226	198	211	223	203	186	9.1	635	1.0	2,457
Saskatchewan	204	163	160	175	156	144	14.8	526	4.0	1,947
Alberta	792	686	705	680	720	661	6.2	2,183	-3.5	7,976
British Columbia	400	353	352	401	391	338	1.3	1,104	3.5	4,890
<b>312 Beverage and tobacco product manufacturing</b>										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	317	251	251	362	313	233	2.9	819	9.4	3,965
Ontario	443	345	321	448	430	382	-2.4	1,109	0.6	5,316
Saskatchewan	3	2	2	3	2	2	14.5	7	-48.8	33
British Columbia	93	73	64	99	84	68	5.9	230	0.4	1,091
<b>313 Textile mills</b>										
Quebec	171	153	148	147	191	165	-9.0	472	-13.6	2,046
Ontario	98	86	84	77	92	83	2.2	267	-10.0	1,028
<b>314 Textile product mills</b>										
Quebec	68	63	65	63	81	74	-11.9	197	-11.0	912
Ontario	87	77	79	72	89	87	-7.9	243	-9.7	1,038
Alberta	x	x	x	x	x	x	x	x	0.0	x
British Columbia	x	x	x	x	x	x	x	x	0.0	x
<b>315 Clothing manufacturing</b>										
Quebec	398	357	314	266	401	374	-3.0	1,069	-7.0	4,247
Ontario	152	144	137	143	157	151	-7.2	433	-6.1	1,923
Manitoba	22	22	21	20	20	20	10.0	64	-5.0	264
Saskatchewan	2	2	2	3	2	3	-5.6	7	7.6	28
Alberta	11	11	10	9	11	10	-0.7	31	-1.2	139
British Columbia	x	x	x	x	x	x	x	x	0.0	x
<b>316 Leather and allied product manufacturing</b>										
Quebec	23	24	23	22	25	24	-4.1	70	-9.4	390
Ontario	20	17	14	24	20	16	-4.6	51	-15.5	239
<b>321 Wood product manufacturing</b>										
Nova Scotia	50	35	41	33	41	37	8.0	126	-1.8	544
Quebec	870	703	618	578	749	686	4.1	2,192	-0.9	8,848
Ontario	554	436	388	403	479	442	0.6	1,379	-2.0	6,058
Manitoba	74	61	52	50	50	42	32.7	187	4.5	697
Saskatchewan	56	47	36	38	32	30	52.4	139	14.6	468
Alberta	317	272	234	250	205	197	35.7	824	11.3	2,932
British Columbia	1,009	865	779	724	856	821	7.2	2,653	-12.0	9,913
<b>322 Paper manufacturing</b>										
Nova Scotia	74	72	75	64	76	69	5.4	221	1.3	875
Quebec	922	800	808	794	948	870	-7.6	2,530	-8.4	10,620
Ontario	934	815	813	789	989	899	-9.2	2,562	-1.9	10,825
Alberta	161	137	130	149	178	137	-5.8	428	1.4	1,788
British Columbia	525	465	436	459	503	437	0.7	1,426	2.8	5,652

Table 10 – continued

## Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	2004	% Change from 2002	2003
<b>323 Printing and related support activities</b>										
Quebec	253	224	213	220	247	212	2.2	690	-3.7	2,758
Ontario	612	500	470	532	593	493	-1.1	1,582	0.4	6,423
Manitoba	47	38	36	45	40	37	6.7	121	-1.2	510
Saskatchewan	14	10	11	12	14	10	0.4	35	5.4	147
Alberta	58	49	48	55	60	52	-6.6	155	-5.6	662
British Columbia	66	54	53	61	64	58	-3.6	174	-8.5	758
<b>324 Petroleum and coal products manufacturing</b>										
Quebec	741	728	714	657	794	774	-4.9	2,183	12.2	8,007
Ontario	1,076	1,041	1,052	896	1,176	996	-1.0	3,170	6.8	11,670
Alberta	777	671	692	638	824	734	-5.3	2,141	10.2	8,200
British Columbia	x	x	x	x	x	x	x	x	0.0	x
<b>325 Chemical manufacturing</b>										
Quebec	774	660	628	669	729	650	1.8	2,062	0.0	8,556
Ontario	2,047	1,751	1,738	1,728	1,930	1,708	1.2	5,535	3.1	21,357
Manitoba	66	58	70	72	67	60	0.9	195	28.2	814
Saskatchewan	107	84	77	35	88	61	24.3	268	16.5	799
Alberta	790	682	698	689	771	706	-3.2	2,170	5.5	8,285
British Columbia	96	81	75	81	90	83	-0.3	253	6.6	1,084
<b>326 Plastics and rubber products manufacturing</b>										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	584	470	442	435	529	448	5.0	1,497	5.8	6,038
Ontario	1,361	1,173	1,102	1,041	1,267	1,169	-1.5	3,636	-0.9	14,790
Manitoba	50	42	39	42	45	44	-0.1	132	5.7	568
Saskatchewan	11	8	8	6	10	8	1.0	26	3.5	107
Alberta	77	63	53	61	68	58	5.9	193	0.9	836
British Columbia	99	84	77	81	92	82	2.3	260	9.6	1,156
<b>327 Non-metallic mineral product manufacturing</b>										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	208	150	133	149	177	128	11.6	491	4.3	2,679
Ontario	430	345	305	387	378	327	4.4	1,080	5.6	5,560
Saskatchewan	4	2	2	2	3	2	2.7	7	-7.7	71
Alberta	108	92	90	100	106	99	-6.1	290	-0.7	1,556
British Columbia	130	111	93	98	111	98	10.5	334	11.6	1,416
<b>331 Primary metal manufacturing</b>										
Quebec	1,624	1,340	1,316	1,325	1,228	1,195	16.7	4,279	3.1	14,769
Ontario	1,732	1,426	1,423	1,322	1,587	1,435	-0.4	4,581	-2.9	16,907
Alberta	189	157	162	158	168	160	4.7	508	41.3	1,812
<b>332 Fabricated metal product manufacturing</b>										
Newfoundland and Labrador	14	13	14	10	9	8	68.8	42	49.4	153
Prince Edward Island	2	1	2	3	2	4	-29.1	5	19.2	27
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
New Brunswick	x	x	x	x	x	x	x	x	0.0	x
Quebec	597	494	448	515	529	474	3.5	1,540	0.5	6,597
Ontario	1,668	1,396	1,289	1,254	1,489	1,364	2.2	4,352	-3.9	17,460
Manitoba	59	49	45	49	48	47	7.3	153	6.0	620
Saskatchewan	36	28	28	27	34	27	5.5	92	4.9	389
Alberta	355	276	256	305	285	236	14.6	887	22.7	3,410
British Columbia	159	133	124	128	140	133	3.2	417	0.4	1,721
<b>333 Machinery manufacturing</b>										
Quebec	431	369	358	445	458	383	-4.4	1,158	-3.7	4,920
Ontario	1,202	1,031	1,032	1,087	1,231	1,079	-4.3	3,265	-6.8	13,688
Manitoba	84	65	72	72	76	68	5.7	221	-9.0	802
Saskatchewan	70	58	46	47	68	54	3.4	174	-10.7	611
Alberta	360	280	304	331	291	230	19.8	944	13.0	3,308
British Columbia	185	157	141	152	156	156	8.1	482	9.1	1,837
<b>334 Computer and electronic product manufacturing</b>										
Quebec	638	467	414	619	549	465	3.9	1,519	-17.3	5,856
Ontario	995	786	729	982	880	728	8.3	2,510	-7.6	9,773
Saskatchewan	x	x	x	x	x	x	x	x	0.0	x
Alberta	173	134	83	171	136	105	4.5	391	-31.8	1,520
British Columbia	107	95	83	91	76	73	26.7	285	-10.0	1,101

Table 10 – continued

## Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Mar. 2004	Feb. 2004	Jan. 2004	Dec. 2003	Mar. 2003	Feb. 2003	% Change from 2003	2004	% Change from 2002	2003
<b>335 Electrical equipment, appliance and component manufacturing</b>										
Quebec	329	266	259	269	293	254	3.6	854	-1.3	3,405
Ontario	550	464	414	434	500	432	5.2	1,427	-7.9	5,458
Manitoba	14	13	12	13	14	13	-7.6	38	-22.0	166
Saskatchewan	15	12	11	12	12	9	16.0	37	-31.9	145
Alberta	39	33	30	31	27	25	35.9	102	9.7	356
British Columbia	x	x	x	x	x	x	x	x	0.0	x
<b>336 Transportation equipment manufacturing</b>										
Nova Scotia	65	57	55	65	68	51	1.5	177	-10.6	707
Quebec	1,072	909	1,300	1,155	1,087	930	3.2	3,281	-7.1	12,570
Ontario	10,421	8,604	8,078	7,381	9,875	9,011	-3.1	27,103	-3.3	103,510
Manitoba	167	132	119	131	177	138	-7.0	418	3.6	1,697
Saskatchewan	23	20	19	19	21	19	-1.7	62	-11.5	240
Alberta	66	61	71	58	72	61	0.5	198	9.0	780
British Columbia	95	87	82	75	88	82	5.3	264	-36.7	991
<b>337 Furniture and related product manufacturing</b>										
Quebec	352	309	305	299	358	314	-0.5	966	-5.6	3,940
Ontario	697	596	660	601	645	598	4.0	1,954	6.2	7,627
Manitoba	47	44	38	42	48	45	-2.9	129	-1.0	544
Saskatchewan	6	5	5	5	6	5	-4.3	15	8.7	68
Alberta	76	63	65	67	73	65	-3.7	204	-10.5	851
British Columbia	72	62	57	63	64	64	-1.5	192	5.6	799
<b>339 Miscellaneous manufacturing</b>										
Newfoundland and Labrador	x	x	x	x	x	x	x	x	0.0	x
Quebec	218	175	158	225	178	158	15.0	551	-1.1	2,221
Ontario	345	272	231	272	329	316	-7.5	848	2.6	3,560
Manitoba	22	14	13	15	13	15	16.8	48	-2.1	175
Saskatchewan	5	4	4	5	4	4	6.8	13	13.6	55
Alberta	41	32	45	43	28	26	21.0	119	44.3	534
British Columbia	61	51	47	64	50	43	12.7	159	1.7	651

## About the Monthly Survey of Manufacturing

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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

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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), Clothing (315), 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 Wood Products (NAICS 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

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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

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## 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

As of January 2004, the Monthly Survey of Manufacturing (MSM) data were revised back to January 1999. Although the historical month-to-month movements were preserved, there were adjustments made to the levels.

The adjustments made to the MSM data were the result of several factors: the use of new and revised data; updates to the industrial classification (NAICS); the updating of the seasonal adjustment factors; and most significantly, the benchmarking of the MSM to the 2000 and 2001 ASM levels.

Starting with reference year 2000, the ASM incorporated some significant conceptual and methodological changes. The most important change was the expansion to include all manufacturing establishments in Canada. Previously only incorporated establishments that had employees and had sales greater than \$30,000 were covered by the ASM. Consequently, by benchmarking to the 2000 and 2001 ASM, the previously released MSM shipments data (which had been benchmarked to the 1998 ASM levels) were revised upwards by about 5.5% at the Canada level.

## 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 nonsampling 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 text table 1 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](mailto:manufact@statcan.ca).

Text Table 1

## National Level CVs by Characteristic

Month	Shipments	Raw material Inventories	Goods in process Inventories	Finished products Inventories	Unfilled orders
	%				
March 2003	0.53	0.94	0.82	1.23	2.19
April 2003	0.55	0.91	0.83	1.26	2.17
May 2003	0.56	0.94	0.81	1.28	2.14
June 2003	0.55	0.94	0.81	1.33	2.23
July 2003	0.62	0.97	0.85	1.42	2.23
August 2003	0.53	0.98	0.85	1.36	2.24
September 2003	0.57	0.99	0.91	1.42	2.07
October 2003	0.57	1.01	1.00	1.39	2.08
November 2003	0.59	1.03	0.98	1.31	2.04
December 2003	0.58	1.06	1.06	1.35	2.00
January 2004	0.57	1.08	1.04	1.36	1.89
February 2004	0.54	1.10	1.00	1.40	1.91
March 2004	0.55	1.10	1.00	1.39	2.12

## 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 nonresponse 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 text table 2 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.

Text Table 2

## Average national weighted rates by characteristic

Characteristic	Response	Imputation	Editing
	%		
Shipments	91.59	5.90	2.52
Raw materials	79.30	17.17	3.54
Goods in process	65.41	11.11	24.47
Finished products	79.63	13.50	6.87
Unfilled orders	82.91	7.25	9.84

## 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.