Catalogue no. 31-001-XIE

Monthly Survey of Manufacturing

August 2004

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Manufacturing, Construction and Energy Division
Monthly survey of manufacturing section

Monthly Survey of Manufacturing

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Symbols

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
0s	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

Schedule of releases	Monthly survey of manufacturing
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	September15, 2004
August 2004	October 15, 2004
September 2004	November 15, 2004
October 2004	December 15, 2004

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Highlights

Monthly Survey of Manufacturing

- In August, manufacturers racked up their ninth successive increase in shipments. Robust production in the durable goods sector coupled with high industrial prices contributed to a record level of shipments of $50.8 billion, up 0.8% since July. This also marks the longest string of increases in manufacturing shipments since 10 consecutive advances were reported from April 1987 to January 1988.

Analysis – August 2004

In August, manufacturers racked up their ninth successive increase in shipments. Robust production in the durable goods sector coupled with high industrial prices contributed to a record level of shipments of $50.8 billion, up 0.8% since July. This also marks the longest string of increases in manufacturing shipments since 10 consecutive advances were reported from April 1987 to January 1988.

Robust demand advances production

Strong demand, both domestic and from abroad, continued to fuel Canada's manufacturing sector. This demand has also been a source for the exceptional gains in industrial prices of several resource-based industries in 2004, contributing to the record high shipment values. During the first eight months of 2004, shipments were up an impressive 8.0% compared with the same period in 2003, although this activity has not translated into job gains. According to the Labour Force Survey for September, employment in manufacturing has changed little since the fall of 2003.

Shipments measured in constant dollars rose 1.5% in August, attesting to solid production levels for the month.

Manufacturers have faced a host of obstacles in 2004, including the strong value of the Canadian dollar, soaring input prices and political unrest in various regions of the world which contributed to record high oil prices. Despite the impediments, the summer of 2004 has been upbeat for many of Canada's big-ticket, durable goods industries. Shipments of durable goods led the way in August, rising another 1.7% to $29.1 billion, the seventh increase in a row. Durable goods shipments are now just shy of the record level set in October 2000 ($29.6 billion) at the height of the high-tech boom.

Non-durable goods manufacturing fell back 0.4% to $21.7 billion in August, the first decline in 10 months. Overall, 12 of 21 industries, accounting for 65% of total shipments, posted increases in August.

Big gains in Ontario and the Prairie provinces

Ontario led the pack as seven provinces and the territories reported higher shipments in August. Driven by increases in the motor vehicle and parts industries, as well as chemical and fabricated metal products manufacturing, Ontario's shipments rose by $435 million (+1.7%) to $26.8 billion.

Manufacturers in Saskatchewan chalked up their fourth consecutive increase and shipments improved by $72 million (+8.6%) to $907 million. Resource-based industries, benefiting from high prices, have provided some big gains to the province's manufacturing sector in 2004. In Manitoba, manufacturers reported record high shipments of $1.1 billion in August, up $68 million (+6.6%) from July. Several industries including transportation equipment and miscellaneous manufacturing contributed to the increase.

Text Table 1

Shipments by province and territory

	July 2004	August 2004	July 2004 to August 2004
	seasonally adjusted		
	$ millions		% change
Canada	**50,423**	**50,841**	**0.8**
Newfoundland and Labrador	253	272	7.3
Prince Edward Island	111	117	5.5
Nova Scotia	780	738	-5.3
New Brunswick	1,245	1,240	-0.4
Quebec	11,784	11,578	-1.8
Ontario	26,336	26,771	1.7
Manitoba	1,032	1,101	6.6
Saskatchewan	835	907	8.6
Alberta	4,445	4,453	0.2
British Columbia	3,597	3,659	1.7
Yukon Territory	1	1	5.2
Northwest Territories including Nunavut	3	4	25.6

Partly offsetting August's boost was a $207 million (-1.8%) decrease in Quebec manufacturing. Shipments fell to $11.6 billion, only the second decline in the last nine months. Despite the recent decline, year-to-date shipments in Quebec are up 7.2% compared with the same period in 2003.

Durable goods industries report solid gains

In August, motor vehicle parts manufacturing led all industries. Shipments jumped 4.8% to $2.8 billion, as several plants boosted production following some extended summer shutdowns in July. In addition, parts manufacturers geared up production as the 2005 models of motor vehicles came on line. During the first eight months of 2004, shipments of motor vehicle parts were up 7.2% compared with the same period in 2003.

Shipments of primary metals hit $3.9 billion, an increase of 2.8% from July. The surge in prices for primary metals, as a result of strong foreign demand in 2004, contributed to yet another record high for shipments. Manufacturers of fabricated metal products boosted shipments by 3.5% to $3.0 billion in August. The industry reported widespread gains as some manufacturers increased production following temporary plant closures for maintenance in July.

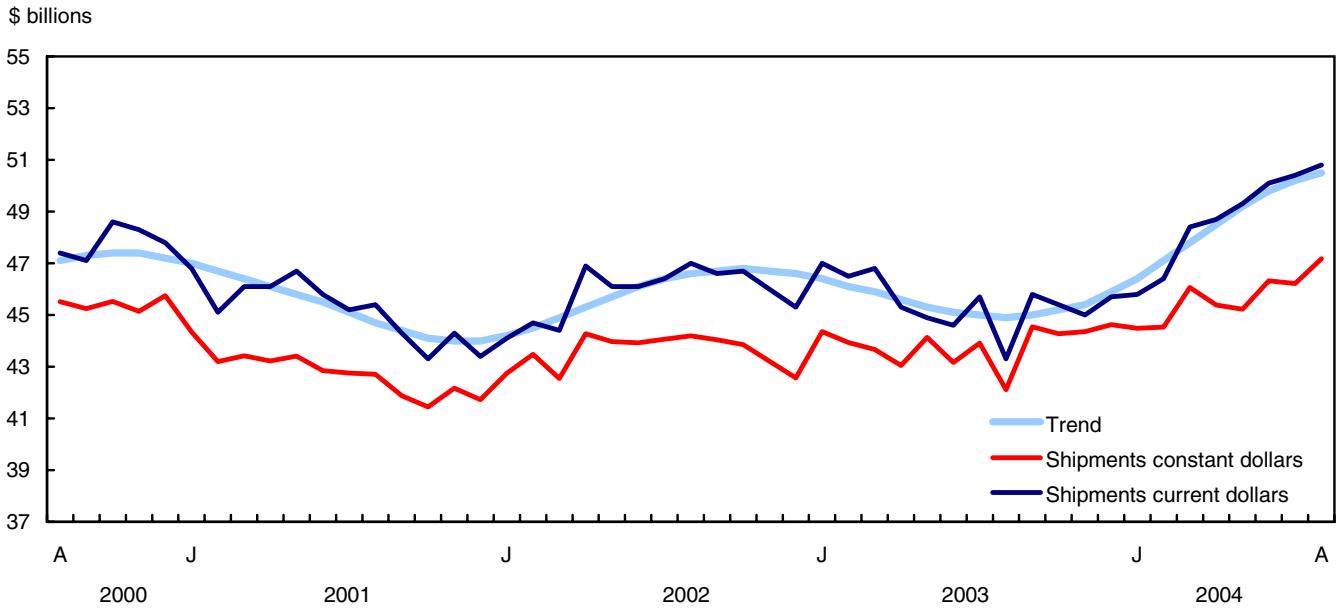
Rounding out the top four industries in August, strong demand and high prices contributed to a 2.2% increase in manufacturing of chemical products.

Manufacturers continue to stock up

Inventories received a big boost in August, rising 1.4% to $61.8 billion, the highest level since December 2002. Manufacturers have been stocking up throughout 2004, on account of strong demand for Canadian-made products. Inventories, which have been trending up since the start of the year, are 6.0% higher in August compared with December 2003.

Chart 1

Shipments remain upbeat



All three stages of fabrication posted higher inventory levels. Manufacturers expressed ongoing confidence in the economy, boosting raw material inventories by 0.9% to $27 billion, the sixth increase in a row. Meanwhile, goods-in-process (+3.6%) and finished-products (+0.7%) inventories were also on the rise.

The fabricated metal products (+4.3%), aerospace products (+3.5%) and primary metals (+2.9%) industries were the main contributors to higher inventories in August.

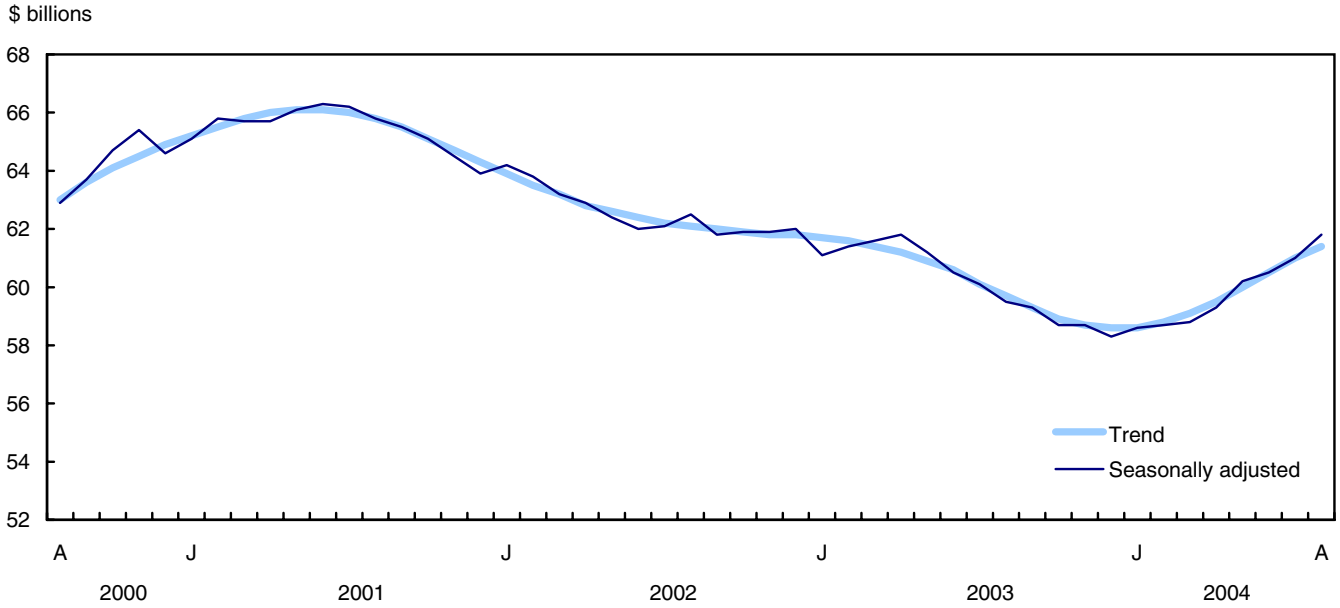
Slight rise in the inventory-to-shipment ratio

Inventories rose at a faster pace than shipments in August, contributing to the slight rise in the inventory-to-shipment ratio. The ratio was 1.22 in August, up from 1.21 in July—its lowest level of the ratio since the start of the current series in 1992.

Meanwhile, the finished-products inventory-to-shipment ratio held constant at 0.41 for the third month in a row, maintaining the lowest level for the ratio since mid-2000. 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.

Chart 2

Big boost in inventories



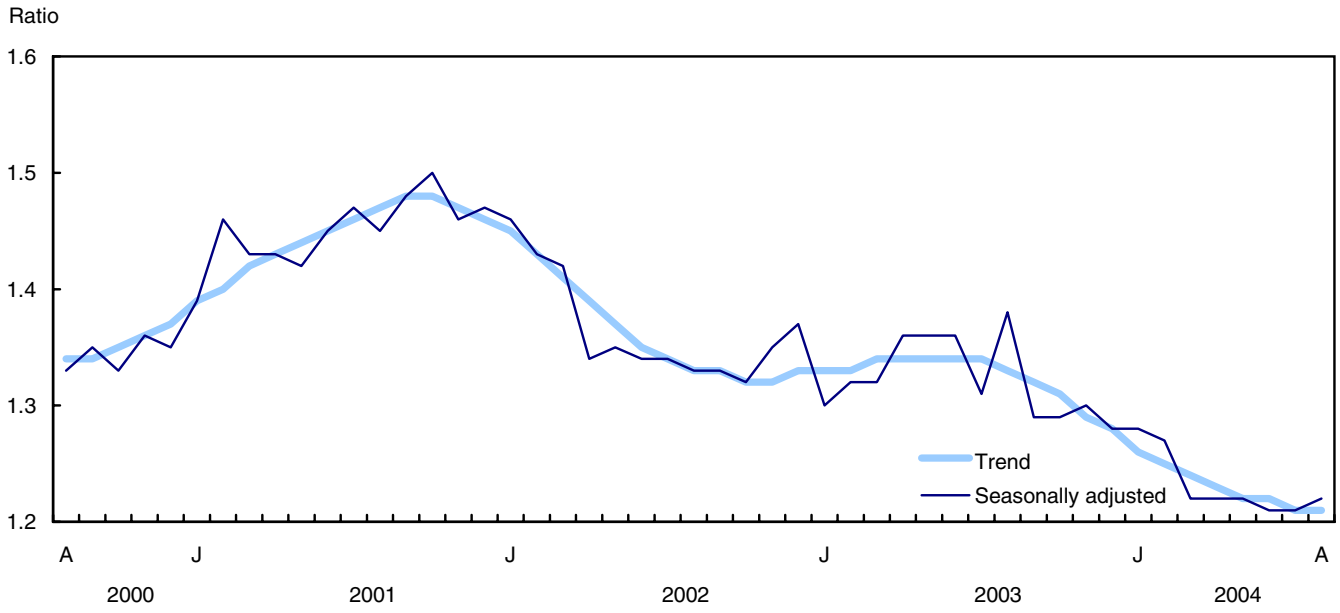
After a steady rise, new orders weaken

New orders fell back 1.0% to $50.4 billion in August, only the second decrease in the last nine months. Despite the drop, the level of new orders remains 14.0% above the recent low of $44.2 billion in November 2003. The trend, although showing signs of slowing, has been positive since August 2003.

Fewer new orders received by the aerospace (-35.7%) and motor vehicles (-1.4%) industries were largely responsible for the decrease.

Chart 3

Inventory-to-shipment ratio edges up



Backlog of orders eases slightly

The backlog of unfilled orders weakened in August, pulled down by the aerospace products and parts industry. Unfilled orders declined 1.1% to $37.4 billion, wiping out much of July's 1.3% gain. Excluding the aerospace industry, unfilled orders were unchanged.

Aside from the aerospace industry (-3.7%), unfilled orders also decreased in the motor vehicle (-7.4%) and parts (-5.9%) industries. Despite the decreases, several new contract signings have bolstered the order books of these industries in recent months. In August, total unfilled orders were 6.9% above levels of December 2003.

Chart 4

Unfilled orders pause

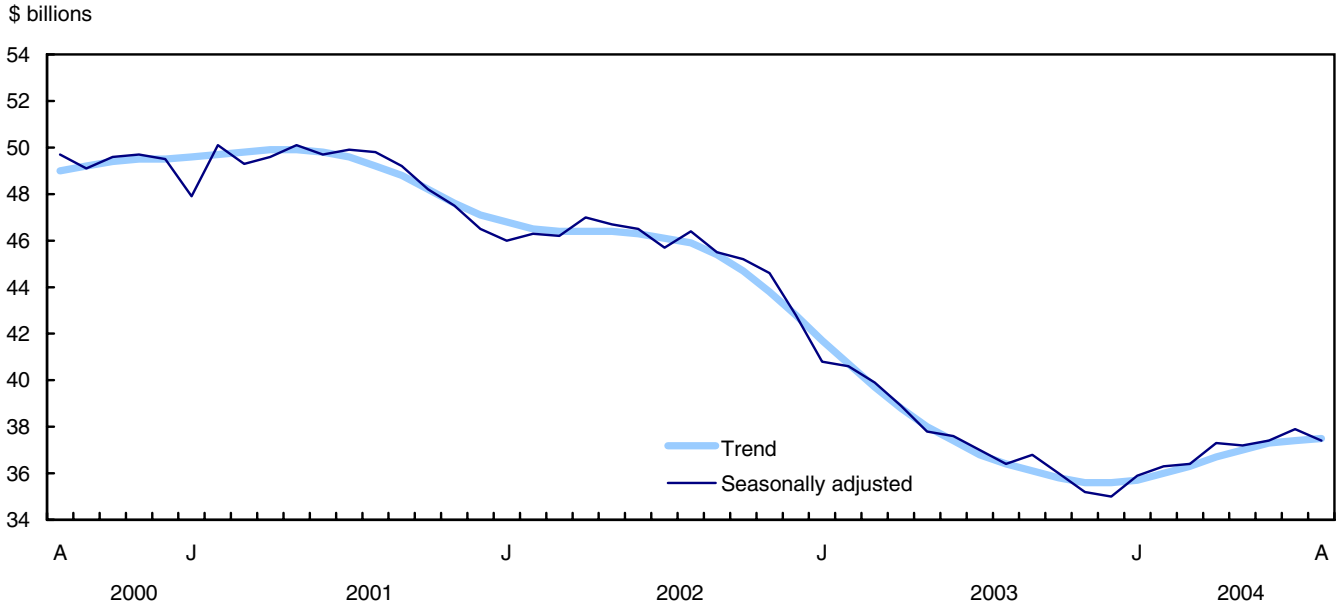


Chart 5

Inventories - Monthly change in trend

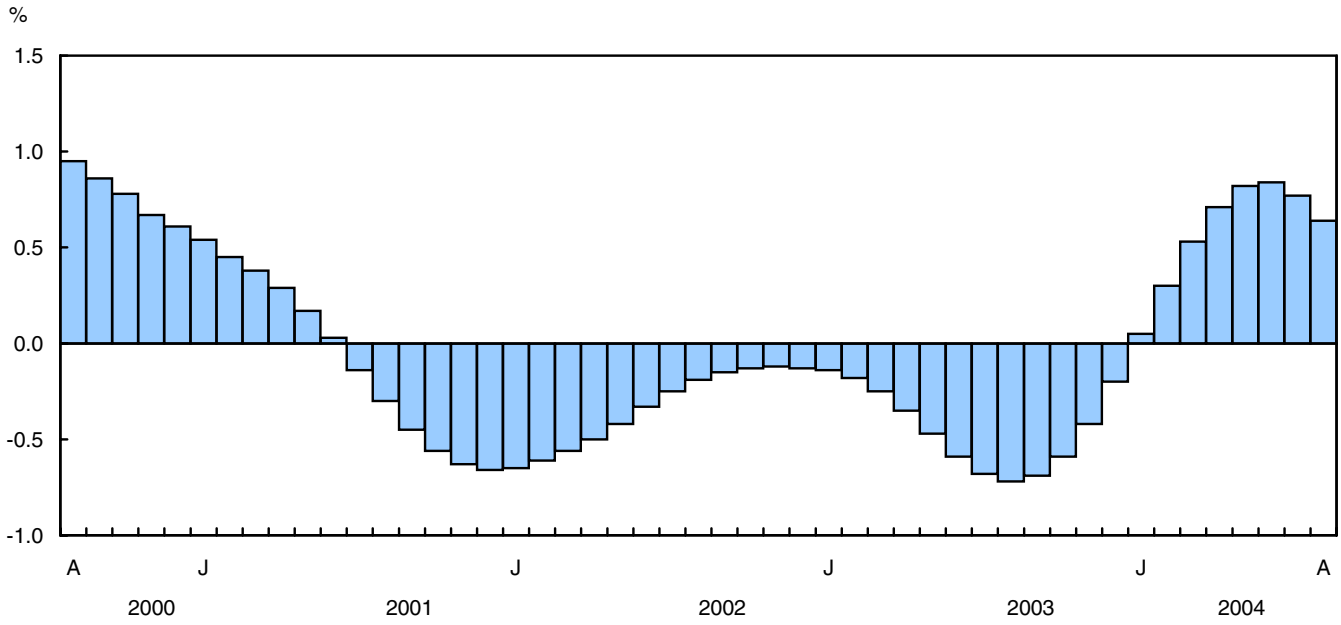


Chart 6

Shipments - Monthly change in trend

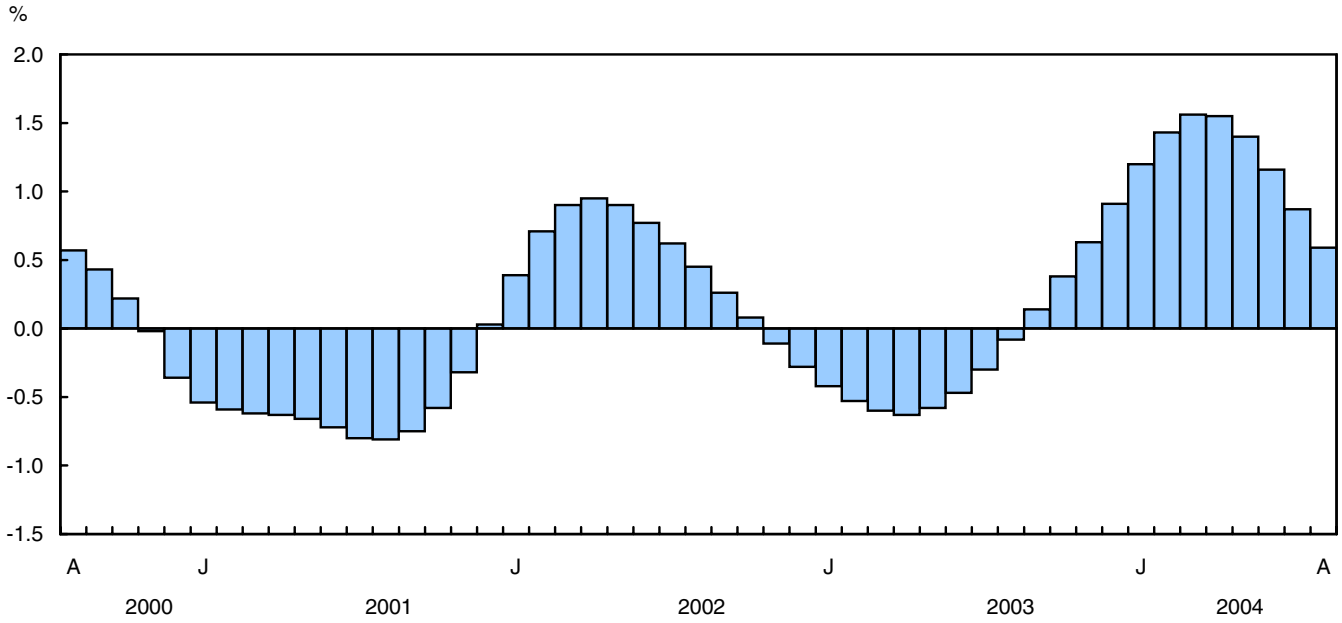
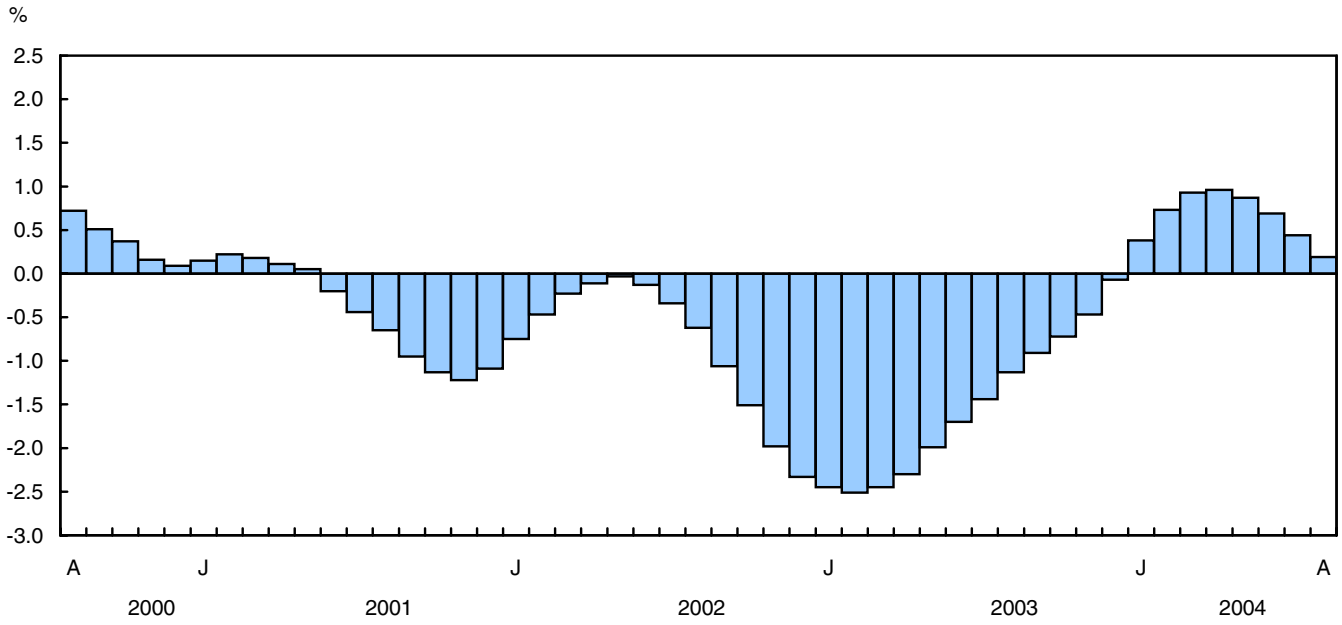


Chart 7

Unfilled orders - Monthly change in trend



Note to readers

To reduce respondent burden, data previously collected via questionnaire for approximately 50% of the simple establishments in the Monthly Survey of Manufacturing (MSM) sample is now replaced with modeled estimates based on the Goods and Services Tax (GST) returns (effective the August 2004 reference month). Revenue data based on the GST is now being received from the Canada Revenue Agency (CRA) on a monthly basis. Data for shipments will now be derived through the use of statistical modeling. The model takes into account the shipments to revenue relationship, as well as the time lag between the reference month for the MSM and the reference period of the GST estimates.

For additional information, refer to the following article Monthly Survey of Manufacturing: Use of Administrative Data, (31-533-XIE, free).

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 goodsindustries include wood products, non-metallic mineral products, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment, appliances and components, transportation equipment, furniture and related products and miscellaneous manufacturing.

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

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

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

Related products

Selected publications from Statistics Canada

31-203-XPB	Manufacturing industries of Canada, national and provincial areas

A note on CANSIM

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

Selected CANSIM tables from Statistics Canada

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)

Selected surveys from Statistics Canada

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

Selected tables of Canadian statistics from Statistics Canada

- *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

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							
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	42,408	58,233	35,548	43,303	45,801	58,572	35,931	46,712
February 2004	43,757	59,751	36,284	44,493	46,355	58,671	36,346	46,770
March 2004	52,181	60,081	36,343	52,239	48,366	58,838	36,362	48,381
April 2004	49,460	60,186	37,216	50,332	48,749	59,304	37,279	49,667
May 2004	51,363	60,696	37,510	51,658	49,296	60,154	37,226	49,243
June 2004	53,566	60,210	37,359	53,414	50,050	60,490	37,359	50,182
July 2004	45,542	60,334	38,220	46,403	50,423	60,957	37,854	50,918
August 2004	51,936	61,764	37,669	51,384	50,841	61,806	37,426	50,414

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	Seasonally adjusted	Trend
August 2003	-5.3	-0.1	-1.0	-0.7	1.38	1.33	-1.6	-1.1	-5.5	0.2
September 2003	5.8	0.1	-0.4	-0.7	1.29	1.32	1.1	-0.9	8.2	0.3
October 2003	-1.0	0.4	-0.9	-0.6	1.29	1.31	-2.3	-0.7	-3.7	0.5
November 2003	-0.8	0.6	-0.1	-0.4	1.30	1.29	-2.2	-0.5	-0.7	0.8
December 2003	1.5	0.9	-0.7	-0.2	1.28	1.28	-0.5	-0.1	2.9	1.2
January 2004	0.3	1.2	0.5	0.0	1.28	1.26	2.6	0.4	2.7	1.5
February 2004	1.2	1.4	0.2	0.3	1.27	1.25	1.2	0.7	0.1	1.7
March 2004	4.3	1.6	0.3	0.5	1.22	1.24	0.0	0.9	3.4	1.7
April 2004	0.8	1.5	0.8	0.7	1.22	1.23	2.5	1.0	2.7	1.6
May 2004	1.1	1.4	1.4	0.8	1.22	1.22	-0.1	0.9	-0.9	1.3
June 2004	1.5	1.2	0.6	0.8	1.21	1.22	0.4	0.7	1.9	1.0
July 2004	0.7	0.9	0.8	0.8	1.21	1.21	1.3	0.4	1.5	0.7
August 2004	0.8	0.6	1.4	0.6	1.22	1.21	-1.1	0.2	-1.0	0.4

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							
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	3,091	1,821	7,810	8,221	3,065	1,801	8,258
February 2004	8,329	3,276	1,872	8,380	8,128	3,214	1,859	8,185
March 2004	10,209	3,440	1,970	10,306	8,701	3,365	1,974	8,817
April 2004	9,592	3,551	2,036	9,659	8,828	3,505	2,083	8,936
May 2004	9,552	3,511	2,070	9,586	8,922	3,441	2,093	8,933
June 2004	10,219	3,338	2,022	10,171	8,982	3,407	2,067	8,955
July 2004	5,626	3,356	2,070	5,675	8,987	3,453	2,100	9,020
August 2004	9,455	3,513	1,932	9,317	9,152	3,549	1,963	9,015

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	Seasonally adjusted	Trend
August 2003	-18.0	-0.7	-3.5	-0.4	0.42	0.38	2.5	0.7	-17.4	-0.6
September 2003	14.1	-0.6	4.3	-0.3	0.38	0.38	0.7	1.4	13.6	-0.4
October 2003	-0.6	-0.3	-1.7	0.0	0.38	0.38	3.5	2.1	-0.1	-0.2
November 2003	-3.7	-0.1	-0.5	0.3	0.39	0.38	3.0	2.7	-3.7	0.1
December 2003	3.2	0.4	-0.8	0.8	0.37	0.38	2.0	3.2	3.0	0.5
January 2004	-0.1	0.9	-0.1	1.2	0.37	0.38	2.1	3.5	-0.1	0.9
February 2004	-1.1	1.4	4.9	1.6	0.40	0.39	3.2	3.5	-0.9	1.4
March 2004	7.1	1.7	4.7	1.7	0.39	0.39	6.2	3.1	7.7	1.6
April 2004	1.5	1.8	4.2	1.8	0.40	0.39	5.5	2.5	1.4	1.6
May 2004	1.1	1.6	-1.8	1.7	0.39	0.39	0.5	1.7	0.0	1.5
June 2004	0.7	1.3	-1.0	1.5	0.38	0.39	-1.3	1.0	0.3	1.2
July 2004	0.0	1.0	1.4	1.2	0.38	0.39	1.6	0.3	0.7	0.8
August 2004	1.8	0.7	2.8	0.9	0.39	0.39	-6.5	-0.1	-0.1	0.6

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							
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	34,622	55,142	33,726	35,493	37,579	55,507	34,130	38,454
February 2004	35,428	56,475	34,412	36,113	38,228	55,457	34,487	38,585
March 2004	41,972	56,641	34,373	41,933	39,665	55,473	34,387	39,564
April 2004	39,867	56,635	35,180	40,674	39,922	55,799	35,196	40,731
May 2004	41,811	57,185	35,440	42,071	40,374	56,713	35,133	40,311
June 2004	43,346	56,871	35,337	43,244	41,068	57,083	35,292	41,227
July 2004	39,916	56,978	36,150	40,728	41,436	57,504	35,754	41,898
August 2004	42,481	58,251	35,736	42,067	41,689	58,257	35,463	41,399

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
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	-0.9	-4.5	0.7
November 2003	-0.2	0.8	0.0	-0.5	1.50	1.49	-2.4	-0.6	0.0	1.0
December 2003	1.2	1.0	-0.7	-0.3	1.48	1.47	-0.7	-0.2	2.9	1.4
January 2004	0.4	1.3	0.5	0.0	1.48	1.45	2.6	0.2	3.3	1.7
February 2004	1.7	1.5	-0.1	0.2	1.45	1.44	1.0	0.6	0.3	1.8
March 2004	3.8	1.5	0.0	0.5	1.40	1.42	-0.3	0.8	2.5	1.7
April 2004	0.6	1.5	0.6	0.6	1.40	1.41	2.4	0.9	2.9	1.6
May 2004	1.1	1.4	1.6	0.8	1.40	1.40	-0.2	0.8	-1.0	1.3
June 2004	1.7	1.1	0.7	0.8	1.39	1.40	0.5	0.7	2.3	1.0
July 2004	0.9	0.8	0.7	0.7	1.39	1.40	1.3	0.4	1.6	0.7
August 2004	0.6	0.6	1.3	0.6	1.40	1.40	-0.8	0.2	-1.2	0.4

Table 4-1

Shipments by major group and selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% change from 2003	2004	% change from 2002	2003
		$millions									
Food manufacturing	311	5,964	5,997	6,134	5,972	5,299	5,329	9.2	45,118	1.7	63,436
Beverage and tobacco product manufacturing	312	1,103	1,139	1,170	1,093	1,120	1,182	0.4	7,980	3.2	12,032
Textile mills	313	275	242	301	296	283	231	-3.6	2,209	-11.0	3,421
Textile product mills	314	197	176	200	197	184	187	-4.3	1,491	-10.3	2,297
Clothing manufacturing	315	585	498	484	517	638	567	-7.2	4,321	-6.3	7,075
Leather and allied product manufacturing	316	69	44	40	41	84	51	-15.6	377	-13.7	743
Wood product manufacturing	321	3,524	3,315	3,554	3,520	2,746	2,647	22.7	25,253	-3.4	31,248
Paper manufacturing	322	2,849	2,828	2,861	2,852	2,774	2,753	-1.4	22,134	-3.6	33,204
Printing and related support activities	323	984	897	980	979	906	898	1.1	7,642	-0.7	11,590
Petroleum and coal products manufacturing	324	4,137	4,022	3,804	3,687	3,252	3,066	13.5	28,834	9.0	37,355
Chemical manufacturing	325	3,915	3,735	4,058	4,158	3,080	3,247	9.0	30,323	3.6	41,187
Plastics and rubber products manufacturing	326	2,245	1,989	2,372	2,268	1,969	1,935	4.3	17,153	1.0	24,722
Non-metallic mineral product manufacturing	327	1,262	1,162	1,276	1,143	1,165	1,179	5.3	8,158	5.3	11,994
Primary metal manufacturing	331	3,746	3,373	3,856	3,753	2,818	2,839	18.4	29,140	2.3	37,606
Fabricated metal product manufacturing	332	3,126	2,695	3,076	2,894	2,560	2,527	9.6	22,184	0.4	31,026
Machinery manufacturing	333	2,293	2,162	2,499	2,257	1,899	2,079	6.6	17,834	-2.9	25,576
Computer and electronic product manufacturing	334	1,555	1,516	1,876	1,646	1,441	1,325	11.9	13,092	-13.1	18,790
Electrical equipment, appliance and component manufacturing	335	893	786	954	885	791	773	6.0	6,947	-5.7	9,984
Transportation equipment manufacturing	336	11,295	7,238	12,140	11,332	8,823	7,180	5.2	85,392	-3.9	120,949
Motor vehicle manufacturing	3361	6,440	3,708	7,314	6,621	4,842	3,818	3.3	48,561	-6.4	69,258
Motor vehicle body and trailer manufacturing	3362	326	276	350	359	269	266	1.9	2,541	0.1	3,695
Motor vehicle parts manufacturing	3363	3,015	1,918	2,905	2,931	2,497	1,906	7.2	22,207	-0.1	31,433
Aerospace product and parts manufacturing	3364	1,131	948	1,146	978	881	879	12.8	8,633	1.5	11,586
Railroad rolling stock manufacturing	3365	169	177	187	202	123	112	-6.8	1,474	-7.7	2,370
Ship and boat building	3366	90	102	119	121	75	82	11.1	854	-5.4	1,100
Furniture and related product manufacturing	337	1,229	1,128	1,238	1,186	1,165	1,105	2.3	9,479	1.2	14,035
Miscellaneous manufacturing	339	691	600	694	686	612	609	6.6	5,153	3.5	7,495
Non-durable goods industries [1]		**22,322**	**21,568**	**22,405**	**22,061**	**19,590**	**19,445**	**6.1**	**167,582**	**1.5**	**237,062**
Durable goods industries [2]		**29,614**	**23,974**	**31,161**	**29,302**	**24,020**	**22,261**	**9.4**	**222,630**	**-2.6**	**308,703**
Manufacturing		**51,936**	**45,542**	**53,566**	**51,363**	**43,610**	**41,706**	**8.0**	**390,212**	**-0.8**	**545,765**

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 July	Current periods				Change from previous month			Trend change from previous month			
			Aug. 2004	July 2004	June 2004	May 2004	Aug. 2004	July 2004	June 2004	Aug. 2004	July 2004	June 2004	May 2004
			$ millions				percentage						
Food manufacturing	311	-87	5,795	5,882	5,790	5,715	-1.5	1.6	1.3	0.3	0.4	0.6	0.7
Beverage and tobacco product manufacturing	312	15	994	979	1,011	1,016	1.5	-3.2	-0.4	-0.1	-0.2	-0.1	-0.1
Textile mills	313	-25	269	294	279	277	-8.7	5.6	0.7	-0.4	-0.4	-0.3	-0.2
Textile product mills	314	4	188	184	185	185	2.2	-0.6	0.4	0.2	0.3	0.3	0.3
Clothing manufacturing	315	-2	527	529	542	550	-0.5	-2.4	-1.4	-0.7	-0.9	-1.0	-1.1
Leather and allied product manufacturing	316	-4	50	54	48	48	-7.4	13.3	-1.3	-0.4	-1.2	-2.2	-3.1
Wood product manufacturing	321	-23	3,327	3,349	3,216	3,223	-0.7	4.1	-0.2	0.8	1.4	2.1	2.7
Paper manufacturing	322	-75	2,799	2,874	2,829	2,858	-2.6	1.6	-1.0	-0.1	0.3	0.7	1.1
Printing and related support activities	323	10	990	981	978	993	1.0	0.3	-1.5	0.2	0.3	0.4	0.5
Petroleum and coal products manufacturing	324	22	3,927	3,905	3,835	3,746	0.6	1.8	2.4	1.3	2.1	3.0	3.7
Chemical manufacturing	325	87	4,004	3,917	3,817	3,740	2.2	2.6	2.0	1.3	1.6	1.9	2.0
Plastics and rubber products manufacturing	326	-23	2,158	2,182	2,151	2,100	-1.1	1.4	2.5	0.3	0.4	0.5	0.6
Non-metallic mineral product manufacturing	327	20	1,058	1,038	1,062	1,032	2.0	-2.3	2.9	0.1	0.2	0.4	0.6
Primary metal manufacturing	331	104	3,873	3,769	3,744	3,656	2.8	0.7	2.4	0.7	1.0	1.4	1.9
Fabricated metal product manufacturing	332	99	2,960	2,861	2,895	2,815	3.5	-1.2	2.8	0.9	1.1	1.2	1.3
Machinery manufacturing	333	78	2,416	2,338	2,353	2,262	3.3	-0.6	4.0	1.1	1.4	1.7	1.8
Computer and electronic product manufacturing	334	-43	1,639	1,682	1,711	1,677	-2.6	-1.7	2.1	-0.9	-0.9	-0.8	-0.4
Electrical equipment, appliance and component manufacturing	335	64	913	849	886	873	7.5	-4.3	1.5	0.6	0.6	0.6	0.6
Transportation equipment manufacturing	336	182	11,092	10,910	10,870	10,676	1.7	0.4	1.8	0.8	1.0	1.3	1.5
Motor vehicle manufacturing	3361	37	6,311	6,275	6,282	6,112	0.6	-0.1	2.8	0.8	1.2	1.7	2.1
Motor vehicle body and trailer manufacturing	3362	14	350	335	324	321	4.3	3.6	0.7	1.9	2.3	2.4	2.2
Motor vehicle parts manufacturing	3363	129	2,841	2,712	2,700	2,810	4.8	0.4	-3.9	0.4	0.5	0.5	0.6
Aerospace product and parts manufacturing	3364	53	1,169	1,116	1,168	1,024	4.7	-4.5	14.0	0.9	1.1	1.4	1.8
Railroad rolling stock manufacturing	3365	-68	193	261	172	196	-25.9	51.7	-12.2	-0.4	-0.1	0.0	0.0
Ship and boat building	3366	0	105	105	106	93	0.1	-1.4	14.3	0.4	1.2	1.4	1.2
Furniture and related product manufacturing	337	-27	1,173	1,200	1,182	1,185	-2.2	1.5	-0.3	-0.2	-0.2	-0.1	0.0
Miscellaneous manufacturing	339	44	688	644	665	669	6.9	-3.2	-0.5	0.6	0.6	0.8	0.9
Non-durable goods industries [1]		**-80**	**21,702**	**21,782**	**21,465**	**21,228**	**-0.4**	**1.5**	**1.1**	**0.6**	**0.9**	**1.2**	**1.4**
Durable goods industries [2]		**498**	**29,139**	**28,641**	**28,585**	**28,068**	**1.7**	**0.2**	**1.8**	**0.6**	**0.8**	**1.1**	**1.4**
Manufacturing		**419**	**50,841**	**50,423**	**50,050**	**49,296**	**0.8**	**0.7**	**1.5**	**0.6**	**0.9**	**1.2**	**1.4**

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	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% change from 2003	Average 2004	% change from 2002	2003
		$millions									
Food manufacturing	311	4,764	4,750	4,742	4,680	4,522	4,489	3.9	4,689	0.2	4,564
Beverage and tobacco product manufacturing	312	1,631	1,638	1,691	1,678	1,625	1,662	-1.0	1,657	2.7	1,650
Textile mills	313	490	476	480	475	524	537	-10.6	476	-8.0	519
Textile product mills	314	365	366	360	359	353	364	-3.1	359	-4.2	365
Clothing manufacturing	315	1,272	1,285	1,256	1,255	1,508	1,526	-12.2	1,301	0.9	1,451
Leather and allied product manufacturing	316	151	157	153	136	152	171	-9.4	135	-9.8	141
Wood product manufacturing	321	4,139	4,135	4,236	4,407	4,042	4,268	-5.6	4,520	-0.9	4,533
Paper manufacturing	322	3,671	3,610	3,584	3,576	3,562	3,618	-1.6	3,570	-1.1	3,588
Printing and related support activities	323	875	875	837	839	882	895	-1.9	858	-2.4	870
Petroleum and coal products manufacturing	324	2,376	2,339	2,277	2,293	2,155	2,171	8.2	2,234	0.8	2,009
Chemical manufacturing	325	6,168	6,105	6,055	6,095	5,614	5,502	8.3	6,123	9.3	5,652
Plastics and rubber products manufacturing	326	2,316	2,332	2,347	2,367	2,235	2,248	1.0	2,330	4.4	2,279
Non-metallic mineral product manufacturing	327	1,117	1,135	1,147	1,164	1,103	1,141	0.2	1,148	-0.2	1,125
Primary metal manufacturing	331	5,280	5,091	4,914	4,764	4,852	4,922	-3.9	4,800	-1.5	4,902
Fabricated metal product manufacturing	332	4,269	4,100	3,932	3,801	3,717	3,740	1.3	3,818	1.3	3,676
Machinery manufacturing	333	4,729	4,608	4,619	4,664	4,482	4,457	0.9	4,585	-3.2	4,522
Computer and electronic product manufacturing	334	3,922	3,847	3,805	4,077	4,378	4,339	-11.4	3,977	-11.3	4,398
Electrical equipment, appliance and component manufacturing	335	1,968	1,954	1,911	1,940	1,860	1,849	-1.8	1,879	-2.8	1,870
Transportation equipment manufacturing	336	9,799	9,131	9,446	9,709	9,438	9,127	-5.9	9,251	-17.9	9,637
Motor vehicle manufacturing	3361	1,585	1,441	1,441	1,574	1,232	1,205	14.2	1,486	-8.6	1,288
Motor vehicle body and trailer manufacturing	3362	464	456	469	449	438	450	-5.8	452	12.3	466
Motor vehicle parts manufacturing	3363	1,928	1,915	1,897	1,937	1,773	1,850	2.7	1,899	13.1	1,847
Aerospace product and parts manufacturing	3364	4,727	4,264	4,587	4,701	4,881	4,508	-12.2	4,393	-30.5	4,875
Railroad rolling stock manufacturing	3365	864	831	800	793	864	878	-16.3	771	-7.5	876
Ship and boat building	3366	100	100	101	108	109	112	-12.6	111	-1.8	129
Furniture and related product manufacturing	337	1,260	1,199	1,218	1,196	1,233	1,242	-3.7	1,210	2.7	1,238
Miscellaneous manufacturing	339	1,203	1,200	1,201	1,222	1,183	1,217	1.3	1,238	4.1	1,217
Non-durable goods industries [1]		**24,078**	**23,933**	**23,781**	**23,753**	**23,133**	**23,184**	**2.1**	**23,731**	**2.3**	**23,087**
Durable goods industries [2]		**37,685**	**36,401**	**36,429**	**36,943**	**36,287**	**36,301**	**-4.0**	**36,426**	**-7.1**	**37,118**
Manufacturing		**61,764**	**60,334**	**60,210**	**60,696**	**59,420**	**59,485**	**-1.7**	**60,157**	**-3.7**	**60,205**

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 July	Current periods				Change from previous month			Trend change from previous month			
			Aug. 2004	July 2004	June 2004	May 2004	Aug. 2004	July 2004	June 2004	Aug. 2004	July 2004	June 2004	May 2004
			$ millions				percentage						
Food manufacturing	311	-43	4,773	4,816	4,771	4,757	-0.9	0.9	0.3	0.0	0.1	0.3	0.5
Beverage and tobacco product manufacturing	312	8	1,648	1,640	1,650	1,629	0.5	-0.6	1.3	0.2	0.2	0.2	0.2
Textile mills	313	10	490	480	481	475	2.0	-0.2	1.4	0.7	0.8	0.8	0.7
Textile product mills	314	-2	366	369	359	358	-0.6	2.7	0.4	0.5	0.7	0.8	0.7
Clothing manufacturing	315	3	1,234	1,232	1,201	1,243	0.2	2.6	-3.4	-0.6	-1.1	-1.5	-1.9
Leather and allied product manufacturing	316	2	134	132	131	127	1.4	0.7	3.0	0.9	0.9	0.8	0.5
Wood product manufacturing	321	71	4,496	4,425	4,446	4,416	1.6	-0.5	0.7	0.6	0.7	0.7	0.7
Paper manufacturing	322	60	3,660	3,600	3,598	3,517	1.7	0.1	2.3	0.7	0.7	0.7	0.5
Printing and related support activities	323	-5	859	864	856	854	-0.6	1.0	0.2	0.1	0.0	0.0	-0.1
Petroleum and coal products manufacturing	324	-6	2,265	2,271	2,271	2,280	-0.3	0.0	-0.4	1.0	1.3	1.7	2.0
Chemical manufacturing	325	43	6,228	6,185	6,111	6,016	0.7	1.2	1.6	0.5	0.7	0.7	0.7
Plastics and rubber products manufacturing	326	-8	2,343	2,351	2,331	2,308	-0.3	0.9	1.0	0.3	0.4	0.5	0.6
Non-metallic mineral product manufacturing	327	5	1,132	1,127	1,126	1,116	0.5	0.0	0.9	0.2	0.2	0.2	0.1
Primary metal manufacturing	331	147	5,187	5,040	4,953	4,834	2.9	1.8	2.5	1.3	1.5	1.6	1.5
Fabricated metal product manufacturing	332	176	4,237	4,061	3,900	3,765	4.3	4.1	3.6	1.8	2.3	2.5	2.5
Machinery manufacturing	333	67	4,689	4,622	4,631	4,615	1.5	-0.2	0.3	0.4	0.4	0.5	0.5
Computer and electronic product manufacturing	334	-27	3,873	3,900	3,924	4,001	-0.7	-0.6	-1.9	-0.1	-0.2	-0.4	-0.6
Electrical equipment, appliance and component manufacturing	335	20	1,968	1,948	1,886	1,908	1.0	3.3	-1.2	0.9	1.1	1.3	1.3
Transportation equipment manufacturing	336	291	9,770	9,479	9,449	9,523	3.1	0.3	-0.8	1.1	1.3	1.5	1.5
Motor vehicle manufacturing	3361	73	1,587	1,514	1,499	1,509	4.8	1.0	-0.6	1.2	1.7	2.2	2.6
Motor vehicle body and trailer manufacturing	3362	7	469	462	461	449	1.5	0.3	2.6	1.0	1.2	1.4	1.4
Motor vehicle parts manufacturing	3363	22	1,962	1,939	1,908	1,932	1.2	1.7	-1.3	0.7	0.8	0.9	0.9
Aerospace product and parts manufacturing	3364	158	4,650	4,492	4,544	4,594	3.5	-1.1	-1.1	1.1	1.3	1.4	1.4
Railroad rolling stock manufacturing	3365	34	864	831	800	793	4.1	3.8	0.9	2.3	3.1	3.6	3.5
Ship and boat building	3366	-1	107	109	110	113	-1.3	-0.7	-3.2	-1.2	-1.6	-1.7	-1.7
Furniture and related product manufacturing	337	41	1,244	1,203	1,214	1,192	3.4	-0.9	1.8	0.5	0.6	0.6	0.5
Miscellaneous manufacturing	339	-3	1,211	1,215	1,203	1,220	-0.3	0.9	-1.4	-0.4	-0.5	-0.5	-0.5
Non-durable goods industries [1]		**61**	**24,000**	**23,939**	**23,758**	**23,565**	**0.3**	**0.8**	**0.8**	**0.4**	**0.6**	**0.6**	**0.7**
Durable goods industries [2]		**788**	**37,807**	**37,018**	**36,731**	**36,589**	**2.1**	**0.8**	**0.4**	**0.8**	**0.9**	**1.0**	**0.9**
Manufacturing		**849**	**61,806**	**60,957**	**60,490**	**60,154**	**1.4**	**0.8**	**0.6**	**0.6**	**0.8**	**0.8**	**0.8**

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	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$millions									
Textile mills	313	224	218	223	227	233	220	-11.0	217	-20.6	233
Textile product mills	314	105	92	91	88	70	82	1.6	91	6.6	86
Clothing manufacturing	315	188	207	218	211	203	210	-7.8	197	3.6	199
Leather and allied product manufacturing	316	22	25	25	25	29	33	-19.4	24	-2.2	28
Plastics and rubber products manufacturing	326	464	435	410	431	372	343	14.5	418	1.9	366
Primary metal manufacturing	331	1,910	1,950	1,970	1,878	1,724	1,714	6.4	1,879	-2.8	1,757
Fabricated metal product manufacturing	332	4,388	4,246	4,124	4,142	3,501	3,433	13.4	3,990	-1.7	3,522
Machinery manufacturing	333	5,212	5,182	5,041	5,002	4,280	4,286	9.7	4,850	-14.5	4,380
Computer and electronic product manufacturing	334	3,103	3,101	3,200	3,051	3,279	3,312	-11.4	3,151	-5.5	3,483
Electrical equipment, appliance and component manufacturing	335	914	888	860	861	896	876	-6.1	869	-3.5	901
Transportation equipment manufacturing	336	18,019	18,866	18,298	18,870	19,283	19,906	-11.0	18,572	-26.7	20,074
Motor vehicle manufacturing	3361	833	899	838	866	554	531	38.3	785	-25.1	566
Motor vehicle body and trailer manufacturing	3362	462	470	468	491	403	405	6.0	474	-1.5	430
Motor vehicle parts manufacturing	3363	1,100	1,171	1,184	1,205	1,063	1,030	12.7	1,189	25.4	1,093
Aerospace product and parts manufacturing	3364	11,108	11,673	11,310	11,898	12,410	12,846	-15.1	11,733	-34.2	13,167
Ship and boat building	3366	34	34	34	45	87	101	-44.8	47	230.1	83
Miscellaneous manufacturing	339	183	182	181	188	179	157	15.4	179	-13.4	162
Non-durable goods industries [1]		**2,191**	**2,174**	**2,136**	**2,015**	**2,218**	**2,214**	**-2.3**	**2,024**	**7.1**	**2,029**
Durable goods industries [2]		**35,478**	**36,046**	**35,223**	**35,496**	**34,598**	**35,144**	**-4.3**	**34,995**	**-18.7**	**35,629**
Manufacturing		**37,669**	**38,220**	**37,359**	**37,510**	**36,817**	**37,357**	**-4.1**	**37,019**	**-17.7**	**37,658**

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 July	Current periods				Change from previous month			Trend change from previous month			
			Aug. 2004	July 2004	June 2004	May 2004	Aug. 2004	July 2004	June 2004	Aug. 2004	July 2004	June 2004	May 2004
		$ millions					percentage						
Textile mills	313	2	224	222	225	227	0.7	-1.3	-0.7	1.0	1.0	1.1	0.9
Textile product mills	314	9	101	93	93	89	9.7	-0.9	5.0	1.9	2.7	3.0	2.9
Clothing manufacturing	315	-3	190	192	188	184	-1.3	2.1	2.5	0.2	0.4	0.6	0.5
Leather and allied product manufacturing	316	0	19	19	18	18	-0.5	8.4	-2.4	-0.5	-2.3	-4.6	-6.8
Plastics and rubber products manufacturing	326	1	438	437	425	426	0.3	2.7	-0.2	0.3	0.8	1.5	2.2
Primary metal manufacturing	331	-16	1,912	1,928	1,923	1,818	-0.8	0.3	5.8	0.3	0.6	0.9	1.1
Fabricated metal product manufacturing	332	142	4,388	4,246	4,124	4,142	3.3	3.0	-0.4	1.6	2.3	2.9	3.2
Machinery manufacturing	333	30	5,212	5,182	5,041	5,002	0.6	2.8	0.8	1.4	1.8	1.9	2.1
Computer and electronic product manufacturing	334	2	3,103	3,101	3,200	3,051	0.1	-3.1	4.9	0.2	0.1	-0.1	-0.2
Electrical equipment, appliance and component manufacturing	335	26	914	888	860	861	2.9	3.3	-0.2	1.1	1.2	1.3	1.2
Transportation equipment manufacturing	336	-691	17,920	18,611	18,370	18,692	-3.7	1.3	-1.7	-0.8	-0.7	-0.4	-0.1
Motor vehicle manufacturing	3361	-66	833	899	838	866	-7.4	7.3	-3.2	0.3	1.3	2.5	3.9
Motor vehicle body and trailer manufacturing	3362	-2	479	481	474	480	-0.5	1.5	-1.3	0.2	0.5	1.0	1.5
Motor vehicle parts manufacturing	3363	-71	1,130	1,201	1,228	1,228	-5.9	-2.2	0.1	-0.5	-0.3	0.0	0.4
Aerospace product and parts manufacturing	3364	-422	10,958	11,379	11,333	11,713	-3.7	0.4	-3.2	-1.5	-1.4	-1.2	-0.8
Ship and boat building	3366	7	38	32	32	41	20.9	-0.1	-22.9	-12.4	-14.0	-14.1	-13.5
Miscellaneous manufacturing	339	-9	177	187	188	187	-5.0	-0.7	0.3	-1.0	-0.5	0.2	1.0
Non-durable goods industries [1]		**0**	**2,160**	**2,160**	**2,118**	**1,977**	**0.0**	**2.0**	**7.1**	**1.6**	**2.4**	**2.8**	**2.6**
Durable goods industries [2]		**-427**	**35,266**	**35,693**	**35,241**	**35,250**	**-1.2**	**1.3**	**0.0**	**0.1**	**0.3**	**0.6**	**0.8**
Manufacturing		**-428**	**37,426**	**37,854**	**37,359**	**37,226**	**-1.1**	**1.3**	**0.4**	**0.2**	**0.4**	**0.7**	**0.9**

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	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	2004	% Change from 2002	2003
		$millions									
Textile mills	313	282	236	298	310	297	230	-1.1	2,226	-13.6	3,356
Textile product mills	314	209	178	203	193	172	192	-1.6	1,522	-11.2	2,290
Clothing manufacturing	315	567	487	492	519	631	543	-7.3	4,351	-6.4	7,066
Leather and allied product manufacturing	316	66	44	40	41	80	47	-17.9	375	-12.6	747
Plastics and rubber products manufacturing	326	2,273	2,014	2,351	2,246	1,998	1,943	5.2	17,281	0.1	24,666
Primary metal manufacturing	331	3,707	3,353	3,947	3,775	2,829	2,847	19.6	29,344	0.8	37,522
Fabricated metal product manufacturing	332	3,268	2,817	3,057	2,939	2,627	2,542	13.6	23,102	0.7	31,096
Machinery manufacturing	333	2,323	2,303	2,538	2,480	1,893	2,148	13.7	18,682	-0.7	25,351
Computer and electronic product manufacturing	334	1,557	1,417	2,025	1,597	1,408	1,290	16.4	13,018	-17.1	18,169
Electrical equipment, appliance and component manufacturing	335	918	815	953	904	810	790	8.6	7,052	-6.8	9,835
Transportation equipment manufacturing	336	10,447	7,806	11,568	11,343	8,200	6,788	12.8	85,488	-6.3	114,188
Motor vehicle manufacturing	3361	6,373	3,769	7,287	6,672	4,865	3,823	4.1	48,801	-6.5	69,172
Motor vehicle body and trailer manufacturing	3362	318	278	327	345	267	252	6.7	2,626	-2.2	3,637
Motor vehicle parts manufacturing	3363	2,944	1,906	2,884	2,914	2,530	1,914	6.8	22,103	-1.0	31,557
Aerospace product and parts manufacturing	3364	566	1,312	558	975	445	640	212.3	8,217	-17.0	5,676
Ship and boat building	3366	90	101	108	118	62	72	-0.3	823	-3.2	1,134
Miscellaneous manufacturing	339	692	600	687	687	634	614	6.6	5,177	4.1	7,498
Non-durable goods industries [1]		**22,339**	**21,606**	**22,526**	**22,057**	**19,595**	**19,434**	**6.2**	**168,038**	**1.4**	**236,934**
Durable goods industries [2]		**29,046**	**24,797**	**30,889**	**29,601**	**23,475**	**22,048**	**14.0**	**225,190**	**-3.8**	**301,074**
Manufacturing		**51,384**	**46,403**	**53,414**	**51,658**	**43,069**	**41,482**	**10.5**	**393,228**	**-1.6**	**538,008**

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 July	Current periods				Change from previous month			Trend change from previous month			
			Aug. 2004	July 2004	June 2004	May 2004	Aug. 2004	July 2004	June 2004	Aug. 2004	July 2004	June 2004	May 2004
		$ millions					percentage						
Textile mills	313	-21	270	291	277	295	-7.2	5.2	-6.1	-0.4	-0.3	-0.1	0.1
Textile product mills	314	14	197	183	190	188	7.5	-3.4	0.8	-0.2	0.1	0.4	0.6
Clothing manufacturing	315	-9	524	533	547	549	-1.7	-2.5	-0.4	-0.8	-0.9	-1.0	-1.0
Leather and allied product manufacturing	316	-6	50	55	47	47	-10.1	17.5	0.8	0.3	-0.2	-1.2	-2.4
Plastics and rubber products manufacturing	326	-33	2,160	2,193	2,150	2,077	-1.5	2.0	3.5	0.2	0.3	0.4	0.5
Primary metal manufacturing	331	83	3,857	3,774	3,849	3,681	2.2	-1.9	4.6	0.5	0.8	1.3	1.9
Fabricated metal product manufacturing	332	119	3,102	2,983	2,876	2,860	4.0	3.7	0.6	0.0	0.4	0.9	1.3
Machinery manufacturing	333	-33	2,446	2,479	2,392	2,485	-1.3	3.6	-3.7	0.4	1.1	1.5	1.5
Computer and electronic product manufacturing	334	58	1,641	1,583	1,860	1,628	3.7	-14.9	14.3	-0.7	-0.7	-0.5	0.0
Electrical equipment, appliance and component manufacturing	335	61	938	877	885	893	7.0	-0.9	-0.9	0.4	0.6	0.7	0.8
Transportation equipment manufacturing	336	-750	10,401	11,151	10,548	10,326	-6.7	5.7	2.2	0.5	0.5	0.7	1.0
Motor vehicle manufacturing	3361	-91	6,245	6,336	6,255	6,163	-1.4	1.3	1.5	0.7	1.0	1.5	1.9
Motor vehicle body and trailer manufacturing	3362	5	347	342	317	323	1.5	7.8	-1.6	1.5	1.6	1.6	1.5
Motor vehicle parts manufacturing	3363	86	2,770	2,684	2,701	2,769	3.2	-0.6	-2.5	0.3	0.4	0.4	0.4
Aerospace product and parts manufacturing	3364	-415	747	1,162	788	670	-35.7	47.5	17.6	0.6	-1.5	-2.8	-2.9
Ship and boat building	3366	7	111	105	97	88	6.5	8.1	9.9	1.7	2.1	2.2	1.8
Miscellaneous manufacturing	339	36	679	643	666	667	5.6	-3.4	-0.2	0.4	0.4	0.5	0.7
Non-durable goods industries [1]		**-122**	**21,702**	**21,824**	**21,607**	**21,229**	**-0.6**	**1.0**	**1.8**	**0.5**	**0.9**	**1.2**	**1.5**
Durable goods industries [2]		**-382**	**28,712**	**29,094**	**28,576**	**28,014**	**-1.3**	**1.8**	**2.0**	**0.3**	**0.6**	**0.9**	**1.2**
Manufacturing		**-504**	**50,414**	**50,918**	**50,182**	**49,243**	**-1.0**	**1.5**	**1.9**	**0.4**	**0.7**	**1.0**	**1.3**

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	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	428	453	441	448	400	423	4.2	3,472	-1.9	5,099
Starch and vegetable fat and oil manufacturing	31122	297	313	311	322	249	258	22.4	2,447	11.4	3,117
Sugar and confectionery product manufacturing	3113	349	310	317	307	337	293	3.8	2,442	10.0	3,764
Fruit and vegetable preserving and specialty food manufacturing	3114	576	540	509	506	477	473	8.0	4,172	-0.9	5,974
Dairy product manufacturing	3115	972	1,011	998	986	940	963	5.6	7,604	9.8	10,958
Meat product manufacturing	3116	1,774	1,784	1,775	1,760	1,376	1,355	18.9	13,264	-3.9	17,027
Cookie, cracker and pasta manufacturing	31182	136	132	130	133	129	122	3.0	1,048	-2.1	1,577
Other food manufacturing	3119	409	415	427	410	409	415	2.0	3,227	4.1	4,936
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	315	319	308	302	321	342	-3.0	2,206	12.7	3,336
Breweries	31212	424	448	460	406	369	415	15.9	2,920	1.0	3,858
Wineries	31213	67	62	78	65	64	63	12.0	489	-2.6	706
Distilleries	31214	52	49	56	52	69	64	-28.3	389	-18.0	831
Tobacco manufacturing	3122	245	260	267	268	297	298	-9.3	1,976	5.1	3,301
313 Textile mills											
Fibre, yarn and thread mills	3131	47	43	55	53	47	35	6.0	392	-12.6	547
Fabric mills	3132	172	149	188	186	180	146	-5.8	1,375	-10.6	2,180
Textile and fabric finishing and fabric coating	3133	56	50	58	58	57	49	-4.2	443	-10.8	694
314 Textile product mills											
Carpet and rug mills	31411	70	63	76	69	63	62	-4.0	542	-8.6	824
Textile bag and canvas mills	31491	26	24	26	22	24	29	-6.6	174	-30.9	267
315 Clothing manufacturing											
Hosiery and sock mills	31511	37	33	29	33	45	41	-15.9	273	-5.1	511
Other clothing knitting mills	31519	46	45	43	47	55	49	0.6	353	-0.4	587
Men's and boys' cut and sew clothing manufacturing	31522	153	123	135	142	176	155	-11.4	1,182	-4.6	2,078
Women's and girls' cut and sew clothing manufacturing	31523	223	186	166	179	243	209	-7.2	1,566	-3.5	2,471
Clothing accessories and other clothing manufacturing	3159	28	21	25	24	24	24	0.5	186	-4.1	289
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	50	26	19	18	59	27	-5.9	206	-17.7	401
321 Wood product manufacturing											
Sawmills and wood preservation	3211	1,811	1,737	1,805	1,727	1,285	1,233	23.1	12,520	-16.1	14,961
Veneer, plywood and engineered wood product manufacturing	3212	893	801	888	951	731	676	40.5	6,790	19.5	7,928
Other wood product manufacturing	3219	819	777	861	842	730	738	6.7	5,943	6.2	8,359
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	1,988	1,984	1,976	2,016	1,895	1,847	1.0	15,389	-6.6	22,490
Paperboard container manufacturing	32221	446	435	460	429	462	477	-7.5	3,451	6.6	5,538
Paper bag and coated and treated paper manufacturing	32222	231	228	241	232	234	238	-8.7	1,877	0.8	3,033
Other converted paper product manufacturing	32229	146	136	137	133	136	138	0.3	1,087	-2.7	1,624
323 Printing and related support activities											
Printing	32311	915	832	913	910	840	830	1.8	7,099	-1.5	10,730
Support activities for printing	32312	68	65	67	70	65	68	-7.6	543	10.5	860
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	3,838	3,750	3,517	3,462	3,010	2,806	13.9	27,033	10.6	34,729
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	277	272	284	294	243	253	9.6	2,201	12.8	3,023
Other basic organic chemical manufacturing	32519	349	348	332	325	271	261	12.8	2,626	-6.6	3,423
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	788	715	775	721	562	572	12.3	5,679	0.6	7,461
Pesticide and other agricultural chemical manufacturing	32532	10	13	77	91	9	12	20.8	501	21.2	444
Pharmaceutical and medicine manufacturing	3254	726	717	809	744	595	694	6.9	5,969	4.9	8,506
Paint and coating manufacturing	32551	186	202	203	189	176	183	6.0	1,461	3.5	2,028
Adhesive manufacturing	32552	76	82	79	78	74	70	7.7	563	8.4	772
Soap and cleaning compound manufacturing	32561	132	137	146	132	139	144	-9.4	1,069	-16.2	1,689
Toilet preparation manufacturing	32562	138	108	123	100	107	103	9.4	916	2.3	1,289
Printing ink manufacturing	32591	40	37	39	37	39	36	2.9	314	1.6	467
All other chemical product manufacturing	32599	389	364	374	343	302	328	8.8	2,850	2.8	3,989
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	198	182	197	192	159	168	9.6	1,364	2.5	1,836
Polystyrene foam product manufacturing	32614	53	50	57	52	51	46	10.5	396	7.3	561
Other plastic product manufacturing	32619	1,103	930	1,175	1,098	958	913	4.7	8,237	2.5	11,881

Table 8-1 – continued

Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	2004	% Change from 2002	2003
Other rubber product manufacturing	32629	149	114	155	156	147	123	1.1	1,167	-11.6	1,750
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	58	63	74	71	60	66	-2.3	481	5.4	722
Glass and glass product manufacturing	3272	187	156	197	187	187	177	-0.5	1,389	0.0	2,084
Cement manufacturing	32731	168	165	174	154	158	167	7.4	1,009	1.2	1,479
Ready-mix concrete manufacturing	32732	334	300	324	270	301	311	10.4	1,898	5.1	2,761
Other concrete product manufacturing	32739	135	119	123	109	123	114	11.8	763	9.6	1,143
Abrasive product manufacturing	32791	27	26	33	26	21	24	-0.2	212	-13.5	294
All other non-metallic mineral product manufacturing	32799	164	144	157	152	137	135	10.4	1,174	12.3	1,683
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,164	1,018	1,128	991	737	754	22.1	8,053	-1.3	9,877
Iron and steel pipes and tubes manufacturing from purchased steel	33121	324	283	309	265	233	218	24.3	2,334	6.2	2,908
Foundries	3315	255	204	288	265	254	223	-2.6	2,081	1.4	3,223
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	57	48	54	57	40	46	15.8	443	4.4	583
Plate work and fabricated structural product manufacturing	33231	587	492	510	448	450	446	15.9	3,598	4.6	4,928
Power boiler and heat exchanger manufacturing	33241	85	83	102	139	99	130	-0.8	832	31.9	1,275
Spring and wire product manufacturing	3326	131	107	136	135	127	116	-6.8	1,013	-12.0	1,575
Coating, engraving, heat treating and allied activities	3328	322	248	317	289	232	207	11.7	2,257	-0.6	3,043
Other fabricated metal product manufacturing	3329	329	308	338	323	277	281	3.9	2,440	-6.5	3,486
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	160	162	185	181	125	142	8.4	1,461	-12.0	1,956
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	219	186	218	192	213	193	4.1	1,621	-7.2	2,465
All other general-purpose machinery manufacturing	33399	220	217	249	203	180	183	9.0	1,624	-1.9	2,336
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	198	184	250	243	248	208	-10.7	1,708	-22.7	3,046
Communications equipment manufacturing	3342	536	539	753	557	433	410	22.1	4,641	-20.2	6,180
Audio and video equipment manufacturing	3343	13	12	18	12	15	15	-9.6	121	-12.2	211
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	87	80	86	92	82	80	3.3	654	-9.3	968
Small electrical appliance manufacturing	33521	23	17	20	21	21	19	7.1	177	-1.7	263
Major appliance manufacturing	33522	134	121	183	180	128	134	4.3	1,243	-3.4	1,754
Battery manufacturing	33591	27	24	23	22	17	18	23.3	173	19.0	217
Communication and energy wire and cable manufacturing	33592	207	192	209	185	188	174	11.5	1,573	-14.5	2,170
All other electrical equipment and component manufacturing	33599	43	43	39	40	36	34	14.4	319	-0.1	429
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	6,440	3,708	7,314	6,621	4,842	3,818	3.3	48,561	-6.4	69,258
Motor vehicle parts manufacturing	3363	3,015	1,918	2,905	2,931	2,497	1,906	7.2	22,207	-0.1	31,433
Aerospace product and parts manufacturing	3364	1,131	948	1,146	978	881	879	12.8	8,633	1.5	11,586
Railroad rolling stock manufacturing	3365	169	177	187	202	123	112	-6.8	1,474	-7.7	2,370
Ship and boat building	3366	90	102	119	121	75	82	11.1	854	-5.4	1,100
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	685	611	678	664	635	586	4.0	5,278	-1.3	7,751
Office furniture (including fixtures) manufacturing	3372	434	404	451	422	419	407	-0.3	3,396	5.3	5,107
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	206	192	217	200	171	178	19.4	1,727	10.7	2,287
Other miscellaneous manufacturing	3399	484	407	477	486	441	431	1.1	3,425	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	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	313	326	317	290	288	294	7.6	302	4.2	281
Starch and vegetable fat and oil manufacturing	31122	138	157	198	188	141	160	16.6	207	4.6	180
Sugar and confectionery product manufacturing	3113	319	342	332	314	327	328	0.5	310	5.0	310
Fruit and vegetable preserving and specialty food manufacturing	3114	867	840	849	853	829	778	5.7	860	5.3	853
Dairy product manufacturing	3115	856	852	874	878	781	802	6.5	870	-3.6	813
Meat product manufacturing	3116	838	854	841	840	792	779	1.5	815	-5.5	797
Cookie, cracker and pasta manufacturing	31182	123	118	123	121	126	124	-6.4	122	7.1	128
Other food manufacturing	3119	507	494	491	483	464	456	10.2	485	2.9	455
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	266	270	267	270	261	276	-1.0	254	7.8	250
Breweries	31212	204	203	209	206	187	190	6.4	198	0.8	185
Wineries	31213	263	266	260	257	247	251	3.0	257	4.8	251
Distilleries	31214	498	494	506	494	529	538	-10.8	490	3.3	528
Tobacco manufacturing	3122	399	405	450	451	402	408	5.7	458	-1.1	434
313 Textile mills											
Fibre, yarn and thread mills	3131	62	62	67	64	69	76	-8.4	63	0.3	69
Fabric mills	3132	349	337	334	335	379	387	-13.4	337	-12.3	378
Textile and fabric finishing and fabric coating	3133	79	77	78	76	76	74	2.4	76	11.7	73
314 Textile product mills											
Carpet and rug mills	31411	96	95	92	90	101	102	-13.2	90	2.2	101
Textile bag and canvas mills	31491	44	43	41	40	41	41	-8.9	40	-32.1	42
315 Clothing manufacturing											
Hosiery and sock mills	31511	116	114	117	117	153	151	-12.8	124	6.8	142
Other clothing knitting mills	31519	181	178	176	169	173	186	-3.1	165	6.1	164
Men's and boys' cut and sew clothing manufacturing	31522	406	404	408	411	498	524	-18.7	421	6.1	507
Women's and girls' cut and sew clothing manufacturing	31523	364	377	347	351	456	432	-9.2	382	1.0	416
Clothing accessories and other clothing manufacturing	3159	58	61	60	60	69	65	-1.3	60	8.0	62
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	106	111	107	90	109	122	-9.7	89	-7.3	92
321 Wood product manufacturing											
Sawmills and wood preservation	3211	2,341	2,353	2,444	2,576	2,402	2,565	-9.5	2,693	-5.3	2,769
Veneer, plywood and engineered wood product manufacturing	3212	800	775	783	798	684	718	2.4	816	5.4	761
Other wood product manufacturing	3219	999	1,007	1,009	1,032	957	985	-0.6	1,012	8.0	1,003
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	2,572	2,546	2,509	2,503	2,498	2,515	-1.1	2,505	-3.1	2,508
Paperboard container manufacturing	32221	513	497	497	489	476	492	0.1	485	2.8	479
Paper bag and coated and treated paper manufacturing	32222	379	364	363	369	388	397	-6.2	372	4.9	391
Other converted paper product manufacturing	32229	151	150	151	146	143	148	-3.3	144	0.9	146
323 Printing and related support activities											
Printing	32311	843	841	805	807	851	862	-1.3	825	-0.5	832
Support activities for printing	32312	32	33	33	32	31	33	-15.5	33	-32.0	37
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	2,050	1,992	1,935	1,952	1,848	1,862	8.5	1,904	1.4	1,703
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	269	245	259	256	247	248	6.9	257	8.7	243
Other basic organic chemical manufacturing	32519	333	320	328	336	344	356	-5.4	332	8.8	346
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	614	638	628	637	546	568	6.9	611	3.2	566
Pesticide and other agricultural chemical manufacturing	32532	77	74	70	69	84	83	6.0	87	29.1	84
Pharmaceutical and medicine manufacturing	3254	2,844	2,805	2,765	2,808	2,551	2,408	12.9	2,817	14.4	2,543
Paint and coating manufacturing	32551	255	259	262	262	270	274	-2.0	268	2.8	268
Adhesive manufacturing	32552	110	110	113	104	95	97	13.2	106	12.8	95
Soap and cleaning compound manufacturing	32561	97	93	92	96	106	109	-12.7	96	-29.0	106
Toilet preparation manufacturing	32562	189	183	197	201	202	203	-3.6	191	8.6	194
Printing ink manufacturing	32591	91	89	85	84	76	78	17.2	86	12.0	74
All other chemical product manufacturing	32599	416	423	413	396	385	395	-2.9	397	1.3	399
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	333	345	359	355	325	347	-2.9	348	-8.5	340
Polystyrene foam product manufacturing	32614	64	65	67	65	51	49	12.2	61	16.6	54
Other plastic product manufacturing	32619	969	968	956	980	924	916	1.9	961	7.4	938

Table 8-2 – continued

Inventory owned for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	Average 2004	% Change from 2002	2003
Other rubber product manufacturing	32629	128	137	130	135	131	138	-5.0	134	-12.9	138
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	72	72	71	75	73	75	-8.0	73	-8.1	76
Glass and glass product manufacturing	3272	245	242	248	248	252	257	-2.1	249	-2.1	252
Cement manufacturing	32731	168	181	189	195	162	181	-1.1	193	-6.8	182
Ready-mix concrete manufacturing	32732	88	91	82	83	93	90	-4.2	84	-7.7	87
Other concrete product manufacturing	32739	127	135	137	142	119	124	17.6	136	11.8	117
Abrasive product manufacturing	32791	53	50	48	50	57	61	-24.3	50	-19.4	61
All other non-metallic mineral product manufacturing	32799	118	122	123	125	132	132	-5.2	125	8.2	131
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,953	1,873	1,742	1,713	1,936	1,947	-11.9	1,757	-1.8	1,950
Iron and steel pipes and tubes manufacturing from purchased steel	33121	572	520	504	507	469	496	-0.6	500	2.3	495
Foundries	3315	269	293	296	309	275	294	-3.6	288	1.6	291
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	85	80	81	85	80	76	-0.3	83	2.2	83
Plate work and fabricated structural product manufacturing	33231	909	875	818	771	710	712	10.6	769	-1.7	677
Power boiler and heat exchanger manufacturing	33241	94	87	90	87	94	92	-10.8	89	4.1	96
Spring and wire product manufacturing	3326	183	178	177	165	157	169	-13.6	162	-11.6	172
Coating, engraving, heat treating and allied activities	3328	170	175	168	176	171	160	-1.3	171	-1.9	169
Other fabricated metal product manufacturing	3329	674	629	620	596	589	597	6.4	618	6.5	579
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	426	389	398	443	437	437	-12.7	424	1.2	474
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	369	348	341	319	339	346	-1.0	326	-7.2	324
All other general-purpose machinery manufacturing	33399	544	542	530	584	569	535	9.0	551	15.1	530
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	575	545	526	561	708	660	-17.8	560	1.2	669
Communications equipment manufacturing	3342	2,116	2,057	2,064	2,152	2,323	2,335	-12.3	2,141	-12.2	2,387
Audio and video equipment manufacturing	3343	44	43	44	55	57	55	-15.2	51	5.0	59
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	127	131	129	143	137	138	-6.6	134	-9.1	141
Small electrical appliance manufacturing	33521	45	46	41	40	39	39	7.2	41	9.3	40
Major appliance manufacturing	33522	198	187	186	206	178	175	2.2	194	11.9	186
Battery manufacturing	33591	50	52	51	46	38	38	31.7	47	-10.8	37
Communication and energy wire and cable manufacturing	33592	860	861	845	849	812	817	-1.7	816	-0.1	808
All other electrical equipment and component manufacturing	33599	104	102	104	103	106	105	-2.2	102	-2.0	103
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	1,585	1,441	1,441	1,574	1,232	1,205	14.2	1,486	-8.6	1,288
Motor vehicle parts manufacturing	3363	1,928	1,915	1,897	1,937	1,773	1,850	2.7	1,899	13.1	1,847
Aerospace product and parts manufacturing	3364	4,727	4,264	4,587	4,701	4,881	4,508	-12.2	4,393	-30.5	4,875
Railroad rolling stock manufacturing	3365	864	831	800	793	864	878	-16.3	771	-7.5	876
Ship and boat building	3366	100	100	101	108	109	112	-12.6	111	-1.8	129
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	801	752	769	762	766	773	-4.9	768	1.3	790
Office furniture (including fixtures) manufacturing	3372	346	333	334	323	353	351	-0.6	330	8.9	335
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	243	241	232	242	256	256	7.2	263	13.0	255
Other miscellaneous manufacturing	3399	960	959	969	980	927	961	-0.2	976	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							
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	25,505	12,991	19,737	58,233	25,272	13,253	20,046	58,572
February 2004	25,911	13,416	20,424	59,751	25,197	13,238	20,237	58,671
March 2004	26,051	13,320	20,710	60,081	25,483	13,224	20,130	58,838
April 2004	25,943	13,449	20,795	60,186	25,724	13,317	20,263	59,304
May 2004	25,970	13,777	20,949	60,696	26,128	13,505	20,521	60,154
June 2004	25,937	13,532	20,741	60,210	26,368	13,494	20,628	60,490
July 2004	26,576	13,364	20,394	60,334	26,808	13,543	20,606	60,957
August 2004	26,945	14,080	20,739	61,764	27,038	14,025	20,744	61,806

Table 10

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	2004	% Change from 2002	2003
	$ millions									
Total										
Newfoundland and Labrador	320	342	353	273	288	346	9.4	2,045	12.5	2,827
Prince Edward Island	129	119	146	154	114	125	8.5	952	2.2	1,356
Nova Scotia	777	787	801	806	734	716	6.0	5,969	2.7	8,524
New Brunswick	1,324	1,284	1,358	1,348	1,148	1,070	9.6	9,373	2.7	12,864
Quebec	11,882	10,955	12,104	11,742	10,760	10,139	7.2	90,379	-1.3	128,514
Ontario	27,076	22,086	28,425	26,997	21,999	20,823	6.4	204,492	-1.7	289,216
Manitoba	1,076	978	1,137	1,097	904	896	10.7	8,256	1.3	11,413
Saskatchewan	869	794	837	844	615	613	22.1	6,425	3.7	7,913
Alberta	4,648	4,444	4,585	4,381	3,830	3,712	13.1	34,209	5.0	45,838
British Columbia	3,828	3,749	3,816	3,714	3,210	3,258	13.0	28,061	-3.3	37,223
311 Food manufacturing										
Newfoundland and Labrador	132	170	176	114	123	166	9.1	804	-9.3	1,056
Prince Edward Island	79	73	84	95	75	85	2.4	595	-1.0	902
Nova Scotia	186	182	172	161	182	173	2.7	1,317	-0.7	1,999
New Brunswick	240	214	294	218	172	179	16.4	1,461	0.6	2,035
Quebec	1,357	1,383	1,425	1,457	1,282	1,248	8.5	10,714	5.2	15,170
Ontario	2,276	2,293	2,300	2,282	2,012	2,059	8.1	17,504	1.9	25,005
Manitoba	265	262	255	238	198	199	19.5	1,893	1.0	2,457
Saskatchewan	170	181	182	174	156	158	11.7	1,419	4.0	1,947
Alberta	795	804	795	800	655	609	16.3	6,125	-3.5	7,976
British Columbia	466	434	453	433	444	454	0.7	3,287	3.5	4,890
312 Beverage and tobacco product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	320	328	354	320	371	382	-6.8	2,429	9.4	3,965
Ontario	506	515	537	520	481	514	3.8	3,640	0.6	5,316
Saskatchewan	3	4	4	3	3	4	6.6	23	-48.8	33
British Columbia	110	113	112	99	106	111	3.6	759	0.4	1,091
313 Textile mills										
Quebec	161	141	176	175	177	128	-6.9	1,282	-13.6	2,046
Ontario	82	77	92	89	77	76	2.3	696	-10.0	1,028
314 Textile product mills										
Quebec	79	65	73	75	79	72	-8.0	563	-11.0	912
Ontario	86	80	95	91	76	84	-4.4	685	-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
315 Clothing manufacturing										
Quebec	356	289	285	306	395	339	-8.5	2,608	-7.0	4,247
Ontario	152	136	140	147	159	150	-6.2	1,161	-6.1	1,923
Manitoba	23	24	21	21	26	21	9.1	174	-5.0	264
Saskatchewan	2	2	2	2	2	2	-3.3	16	7.6	28
Alberta	6	6	8	9	11	13	-15.3	75	-1.2	139
British Columbia	x	x	x	x	x	x	x	x	0.0	x
316 Leather and allied product manufacturing										
Quebec	45	26	24	22	54	25	-7.5	209	-9.4	390
Ontario	15	9	7	10	23	19	-32.4	97	-15.5	239
321 Wood product manufacturing										
Nova Scotia	62	60	72	59	51	52	17.1	426	-1.8	544
Quebec	917	809	959	969	778	636	15.6	6,750	-0.9	8,848
Ontario	591	572	632	622	520	556	8.6	4,379	-2.0	6,058
Manitoba	82	75	73	72	67	64	27.1	561	4.5	697
Saskatchewan	75	49	55	69	44	40	62.8	447	14.6	468
Alberta	343	331	350	357	270	263	42.4	2,571	11.3	2,932
British Columbia	1,243	1,225	1,215	1,163	846	868	30.6	8,714	-12.0	9,913
322 Paper manufacturing										
Nova Scotia	71	88	70	85	74	77	3.7	612	1.3	875
Quebec	903	888	875	883	894	891	-4.2	6,922	-8.4	10,620
Ontario	884	895	925	873	871	883	-4.5	6,999	-1.9	10,825
Alberta	168	153	156	152	161	141	-1.1	1,204	1.4	1,788
British Columbia	505	496	517	552	479	470	4.3	3,968	2.8	5,652

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	2004	% Change from 2002	2003
323 Printing and related support activities										
Quebec	232	217	230	237	225	221	1.1	1,833	-3.7	2,758
Ontario	552	497	544	542	473	491	2.0	4,262	0.4	6,423
Manitoba	41	37	47	45	39	41	1.0	331	-1.2	510
Saskatchewan	14	12	13	12	14	13	1.4	96	5.4	147
Alberta	52	48	55	56	52	46	-1.3	425	-5.6	662
British Columbia	68	60	64	60	78	58	-0.9	489	-8.5	758
324 Petroleum and coal products manufacturing										
Quebec	884	871	784	748	706	665	13.9	6,153	12.2	8,007
Ontario	1,339	1,297	1,284	1,218	964	954	20.1	9,403	6.8	11,670
Alberta	922	870	803	743	749	699	9.4	6,170	10.2	8,200
British Columbia	x	x	x	x	x	x	x	x	0.0	x
325 Chemical manufacturing										
Quebec	743	752	824	906	676	714	4.6	6,065	0.0	8,556
Ontario	2,052	1,929	2,083	1,950	1,588	1,714	8.8	15,579	3.1	21,357
Manitoba	68	57	80	82	46	56	6.5	560	28.2	814
Saskatchewan	60	50	109	159	22	26	28.3	776	16.5	799
Alberta	844	796	792	888	627	617	11.7	6,264	5.5	8,285
British Columbia	120	123	124	120	99	95	13.5	849	6.6	1,084
326 Plastics and rubber products manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	552	498	596	569	498	467	6.9	4,251	5.8	6,038
Ontario	1,332	1,143	1,409	1,343	1,142	1,121	3.3	10,205	-0.9	14,790
Manitoba	53	53	59	53	47	47	6.9	402	5.7	568
Saskatchewan	16	13	9	11	9	10	16.2	87	3.5	107
Alberta	78	77	83	75	76	77	5.5	578	0.9	836
British Columbia	104	103	102	95	98	112	-3.1	760	9.6	1,156
327 Non-metallic mineral product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	310	262	313	290	280	250	9.4	1,898	4.3	2,679
Ontario	558	526	574	522	512	536	5.0	3,732	5.6	5,560
Saskatchewan	12	9	10	7	9	10	7.4	50	-7.7	71
Alberta	166	159	163	138	158	170	2.3	1,041	-0.7	1,556
British Columbia	147	138	146	130	128	132	10.2	1,028	11.6	1,416
331 Primary metal manufacturing										
Quebec	1,446	1,355	1,522	1,518	1,189	1,204	21.8	11,667	3.1	14,769
Ontario	1,700	1,476	1,747	1,675	1,169	1,194	15.0	12,911	-2.9	16,907
Alberta	180	177	157	147	136	133	10.9	1,311	41.3	1,812
332 Fabricated metal product manufacturing										
Newfoundland and Labrador	33	22	20	17	16	16	60.7	154	49.4	153
Prince Edward Island	3	1	2	2	2	2	5.9	16	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	655	521	609	599	568	542	6.9	4,516	0.5	6,597
Ontario	1,726	1,486	1,740	1,628	1,387	1,370	8.5	12,494	-3.9	17,460
Manitoba	65	64	66	61	56	54	15.0	470	6.0	620
Saskatchewan	45	41	45	41	35	35	15.6	300	4.9	389
Alberta	359	327	353	315	282	295	15.1	2,505	22.7	3,410
British Columbia	184	178	182	175	144	150	15.9	1,313	0.4	1,721
333 Machinery manufacturing										
Quebec	449	384	479	432	382	352	5.6	3,286	-3.7	4,920
Ontario	1,167	1,138	1,300	1,191	981	1,168	1.8	9,272	-6.8	13,688
Manitoba	67	73	92	82	54	74	12.6	611	-9.0	802
Saskatchewan	57	52	50	51	45	44	9.1	455	-10.7	611
Alberta	337	298	355	292	252	261	23.3	2,571	13.0	3,308
British Columbia	184	188	179	170	152	146	13.6	1,358	9.1	1,837
334 Computer and electronic product manufacturing										
Quebec	462	434	592	480	434	398	7.2	3,963	-17.3	5,856
Ontario	882	853	944	913	771	694	15.1	6,979	-7.6	9,773
Saskatchewan	x	x	x	x	x	x	x	x	0.0	x
Alberta	80	91	186	106	102	94	8.5	987	-31.8	1,520
British Columbia	88	93	98	93	95	97	11.2	755	-10.0	1,101

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Aug. 2004	July 2004	June 2004	May 2004	Aug. 2003	July 2003	% Change from 2003	2004	% Change from 2002	2003
335 Electrical equipment, appliance and component manufacturing										
Quebec	320	261	342	311	278	268	7.3	2,380	-1.3	3,405
Ontario	465	423	513	480	419	412	5.1	3,787	-7.9	5,458
Manitoba	12	11	12	11	12	12	-11.2	96	-22.0	166
Saskatchewan	16	16	15	15	13	12	21.5	113	-31.9	145
Alberta	35	35	32	29	32	32	22.6	270	9.7	356
British Columbia	x	x	x	x	x	x	x	x	0.0	x
336 Transportation equipment manufacturing										
Nova Scotia	56	69	64	73	52	45	11.7	509	-10.6	707
Quebec	1,158	1,019	1,145	943	952	895	7.7	8,893	-7.1	12,570
Ontario	9,722	5,817	10,521	9,903	7,487	5,921	4.8	72,982	-3.3	103,510
Manitoba	143	126	167	176	131	114	1.7	1,185	3.6	1,697
Saskatchewan	22	18	26	24	17	21	4.6	175	-11.5	240
Alberta	60	57	62	59	63	60	-5.6	500	9.0	780
British Columbia	84	83	100	101	77	82	7.3	732	-36.7	991
337 Furniture and related product manufacturing										
Quebec	332	284	336	327	339	286	-1.1	2,578	-5.6	3,940
Ontario	671	635	679	645	623	615	3.8	5,224	6.2	7,627
Manitoba	46	44	47	46	45	46	-1.1	357	-1.0	544
Saskatchewan	6	6	6	6	6	7	-0.5	46	8.7	68
Alberta	75	65	73	70	69	65	-1.4	559	-10.5	851
British Columbia	79	74	75	71	67	68	6.9	566	5.6	799
339 Miscellaneous manufacturing										
Newfoundland and Labrador	x	x	x	x	x	x	x	x	0.0	x
Quebec	202	170	162	176	204	159	8.3	1,419	-1.1	2,221
Ontario	318	286	360	353	263	291	2.9	2,502	2.6	3,560
Manitoba	18	12	20	17	12	17	20.4	130	-2.1	175
Saskatchewan	6	5	6	5	4	5	11.5	39	13.6	55
Alberta	58	50	67	57	48	47	13.2	397	44.3	534
British Columbia	60	53	53	54	54	63	13.2	456	1.7	651

About the Monthly Survey of Manufacturing

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

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

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

Concepts and definitions

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

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

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

1. Shipments

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

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

2. Inventories

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

3. Orders

a) Unfilled orders

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

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

b) New orders

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

4. Non-durable / durable goods

a) Non-durable goods industries

Non-durable goods industries include Food (NAICS 311), Beverage and Tobacco Products (312), Textile Mills (313), Textile Product Mills (314), 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

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 stratums 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

Only a subset of the sample establishments is sent out for data collection. For the remaining units, information from administrative data files is used as a source for deriving shipment data. For those establishments that are surveyed, 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.

Use of Administrative Data

Managing response burden is an ongoing challenge for Statistics Canada. In an attempt to alleviate response burden, especially for small businesses, STC has been investigating various alternatives to survey taking. Administrative data files are a rich source of information for business data and STC is working at mining this rich data source to its full potential. As such, effective the August 2004 reference month, the MSM has reduced the number of simple establishments in the sample that are surveyed directly and instead, derives shipments data for these establishments from Goods and Services Tax (GST) files using a statistical model. The model accounts for the difference between shipments and sales (reported for GST purposes) as well as the time lag between the reference period of the survey and the reference period of the GST file.

Inventories and unfilled orders estimates for establishments where shipments are GST-based are derived using the MSM's imputation system. The imputation system applies to the previous month values, the month-to-month and year-to-year changes in similar firms which are surveyed.

Detailed information on the methodology used for modelling shipment from administrative data sources can be found in the '*Monthly Survey of Manufacturing: Use of Administrative Data'* (Catalogue no. 31-533-XIE) document.

Data quality

Statistical edit and imputation

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

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

Revisions

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

Estimation

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

Benchmarking

The Annual Survey of Manufactures (ASM) released estimates for reference year 2002 and revisions for 2000 and 2001 on June 16, 2004. In the future, the Monthly Survey of Manufacturing (MSM) will re-benchmark to the ASM data for reference years 2000 and 2001 and benchmark to ASM 2002. Until these revisions take place, the MSM is currently benchmarked to the former ASM levels of 2000 and 2001.

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* .

Text Table 1

National level CVs by characteristic

Month	Shipments	Raw material Inventories	Goods in process Inventories	Finished products Inventories	Unfilled orders
			%		
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	0.55	1.10	1.00	1.37	1.91
March 2004	0.59	1.10	0.98	1.37	2.12
April 2004	0.61	1.16	0.97	1.31	2.28
May 2004	0.61	1.13	0.94	1.28	2.32
June 2004	0.58	1.13	0.96	1.29	2.39
July 2004	0.60	1.19	0.97	1.25	2.40
August 2004	0.60	1.14	0.94	1.28	2.61

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

National weighted rates by source and characteristic

Characteristics	Survey Source			Administrative Data Source		
	Response	Imputation	Editing	Modeled	Imputation	Editing
	%					
Shipments	81.94	4.03	5.59	7.16	0.40	0.88
Raw materials	75.23	11.32	3.47	0.00	9.76	0.23
Goods in process	64.30	9.30	20.42	0.00	5.69	0.30
Finished products	76.29	9.29	5.66	0.00	7.91	0.86
Unfilled orders	53.55	13.33	28.27	0.00	4.46	0.39

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 trendcycle. 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.