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Monthly Survey of Manufacturing

July 2004



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Statistics Canada
Manufacturing, Construction and Energy Division
Monthly survey of manufacturing section

Monthly Survey of Manufacturing

July 2004

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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
- 0^s 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	September 15, 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

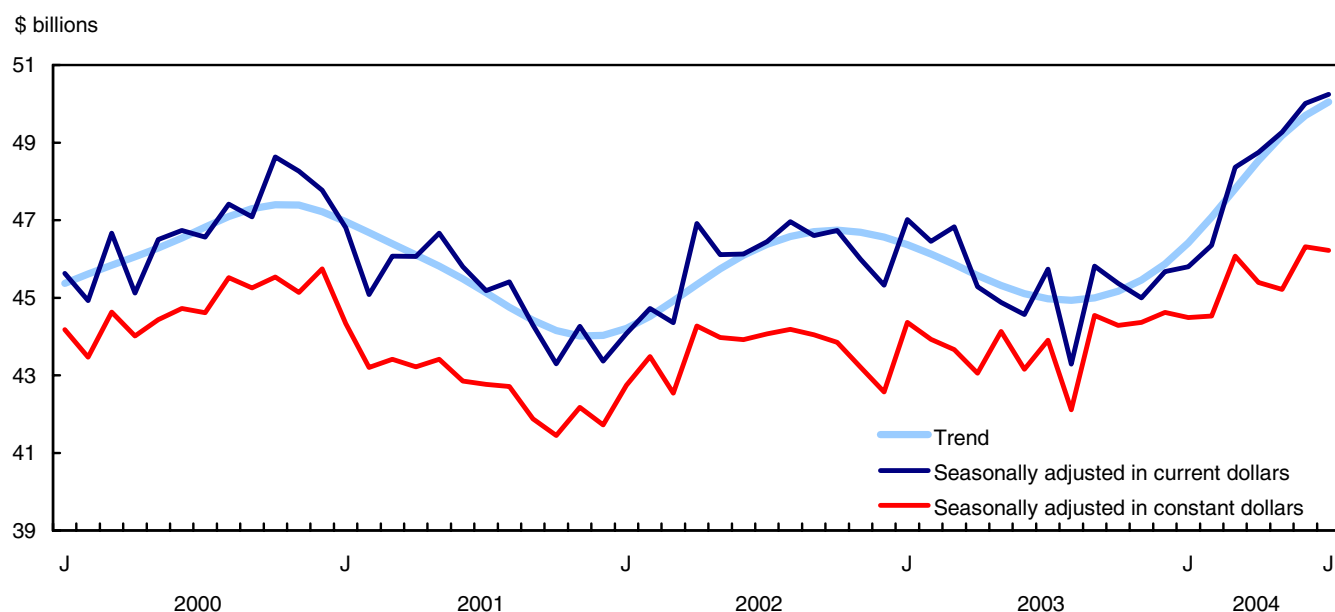
- Led primarily by price increases in key industries such as petroleum, chemicals, wood and primary metals, manufacturers maintained momentum through July. Shipments continued to climb, to a record high of \$50.2 billion, up 0.5% from June. The gap between shipments measured in real and constant dollars has widened since March 2004. Increasing new and unfilled orders and a buildup of inventories rounded out the month.

Analysis – July 2004

Led primarily by price increases in key industries such as petroleum, chemicals, wood and primary metals, manufacturers maintained momentum through July. Shipments continued to climb, to a record high of \$50.2 billion, up 0.5% from June. The gap between shipments measured in real and constant dollars has widened since March 2004. Increasing new and unfilled orders and a buildup of inventories rounded out the month.

Chart 1

Shipments rise for eight consecutive month



Manufacturers maintain momentum

The Canadian manufacturing sector is maintaining a relatively steady pace. July marked the eighth consecutive increase in shipments, the longest string of gains since the late 1990s. Although manufacturing shipments have increased by 11.7% over the last eight months, the pace has slowed in recent months. Shipments edged up 0.5% in July—the smallest gain since January.

The momentum in the manufacturing sector has pushed capacity utilization to its highest level in four years, reaching 86.6% in the second quarter of 2004. July's increase in shipments was in 12 of 21 industries, accounting for a healthy 80.7% of total shipments. Non-durable goods shipments increased 1.2% while durable goods manufacturing declined 0.1% to \$28.5 billion in July. Foreign and domestic demand for natural resource based products (wood, petroleum and primary metals) also contributed to shipment gains.

Quebec and Western provinces leading the way

Quebec, British Columbia, Alberta and Saskatchewan led the way, reporting solid gains in shipments in July. Shipments in Quebec continued to surge ahead, gaining ground for the seventh time in eight months. Petroleum and wood product manufacturing contributed to a \$159 million (+1.4%) increase in shipments to \$11.8 billion. Shipments are hovering just below the peak levels of late 2000.

Shipments in Alberta also continued to rise, increasing for the 11th time in 12 months. July's shipments rose by \$57 million (+1.3%) to \$4.5 billion, on the strength of the chemical products and primary metals industries. Year-to-date shipments in Alberta are 10.6% above the same period in 2003.

British Columbia also posted a positive move in July, rebounding from a slight decline in June. Machinery and wood products contributed to a \$44 million (+1.2%) increase in shipments to \$3.6 billion. The gain added to strength built up in British Columbia this year, marking the sixth increase in shipments in seven months.

Shipments in Saskatchewan increased for the third month in a row, up a strong \$24 million (+3.1%) to \$815 million. Shipments also increased in Nova Scotia (+0.6%) and New Brunswick (+1.1%) in July.

Manufacturing declined \$37 million (-3.5%) in Manitoba. Following five months of growth in Ontario, declines in transportation equipment, fabricated metals and beverages and tobacco products contributed to a \$19 million (-0.1%) decrease in shipments. Shipments also declined by \$13 million (-5.0%) in Newfoundland and Labrador and \$2 million (-1.7%) in Prince Edward Island.

Text Table 1

Shipments by province and territory

	June 2004	July 2004	June 2004 to July 2004
	seasonally adjusted		
	\$ millions		% change
Canada	50,010	50,241	0.5
Newfoundland and Labrador	269	255	-5.0
Prince Edward Island	110	109	-1.7
Nova Scotia	769	774	0.6
New Brunswick	1,236	1,249	1.1
Quebec	11,663	11,822	1.4
Ontario	26,157	26,138	-0.1
Manitoba	1,051	1,014	-3.5
Saskatchewan	791	815	3.1
Alberta	4,408	4,465	1.3
British Columbia	3,551	3,595	1.2
Yukon Territory	1	1	19.5
Northwest Territories including Nunavut	4	3	-6.4

Non-durable goods manufacturing surging ahead

Shipments of non-durable goods continued to climb in July, increasing a solid 1.2%. Non-durable goods were up 7.6% in the first seven months of the year compared with the same period in 2003.

Manufacturers of chemical products reported a 2.6% jump in shipments to \$3.9 billion. July's increase marked the sixth consecutive rise in shipments. Food manufacturing increased \$82 million to \$5.9 billion in July, led by the fruit and vegetable preservation industry. Rounding out solid gains in non-durable goods manufacturing, petroleum products increased by \$67 million (+1.7%).

Also contributing to higher shipments in July were railroad rolling stock and wood products. Railroad rolling stock shipments increased by \$80 million (+46.2%), as manufacturers stepped up production to meet rising demand for rail cars. Shipments of wood products have risen sharply this year, soaring 20.4% higher than the same period in 2003. Following a slight decline in June, wood shipments continued to climb—increasing \$71 million in July. Ongoing demand for wood products remains strong. The value of residential building permits issued in Canada was up 18.3% in the first seven months of the year compared with 2003. The US housing market remains hot and rebuilding efforts from recent hurricanes in Florida have just begun.

Inventories continue to build

Manufacturers continued to stock up in July. Inventories rose 0.6% to \$60.8 billion, the seventh consecutive increase and the highest level of inventories since May 2003. Robust global demand has resulted in the rebound in manufacturing inventories. The trend has been positive throughout 2004.

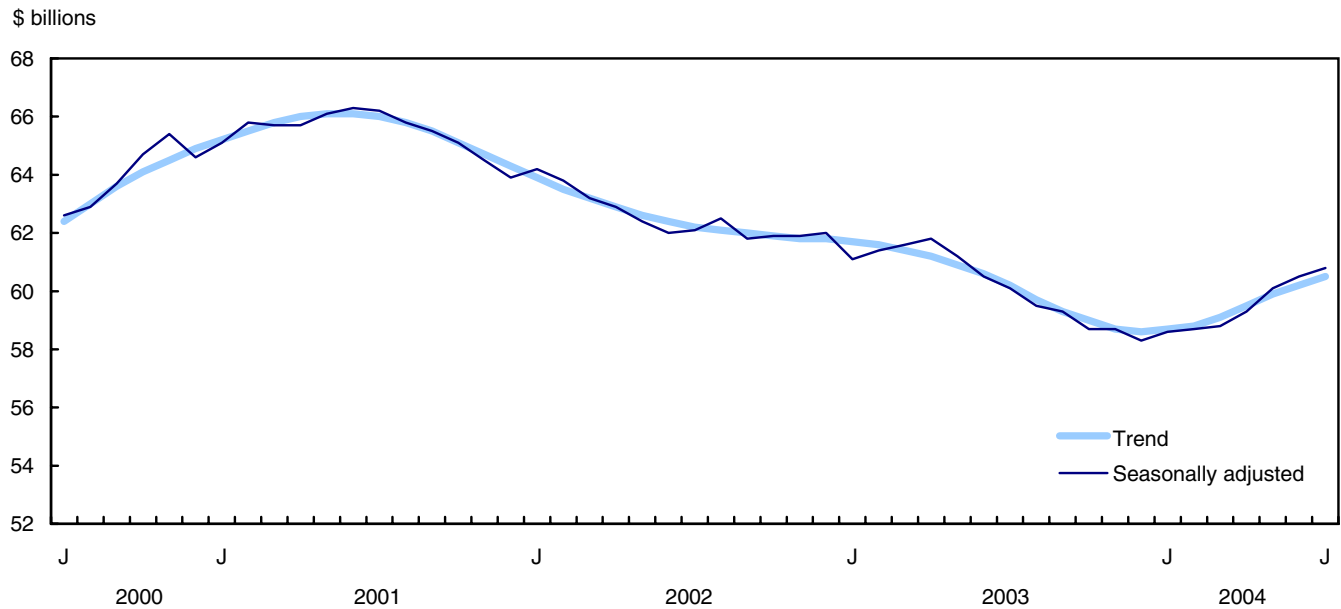
July’s inventories were boosted by continuing buildup in raw materials. Inventories of raw materials rose 1.6% to \$26.8 billion, a positive sign of future production.

Goods-in-process inventories grew slightly in July, edging up 0.4% to \$13.5 billion. Meanwhile, finished-products inventories declined 0.6% to \$20.5 billion following three months of growth.

The main contributors to higher inventories include the fabricated metals (+4.2%), primary metals (+1.6%), chemical products (+1.2%) and electrical equipment and appliance (+3.0%) industries.

Chart 2

Raw materials driving gains in total inventories



Inventory-to-shipment ratio holds at record low

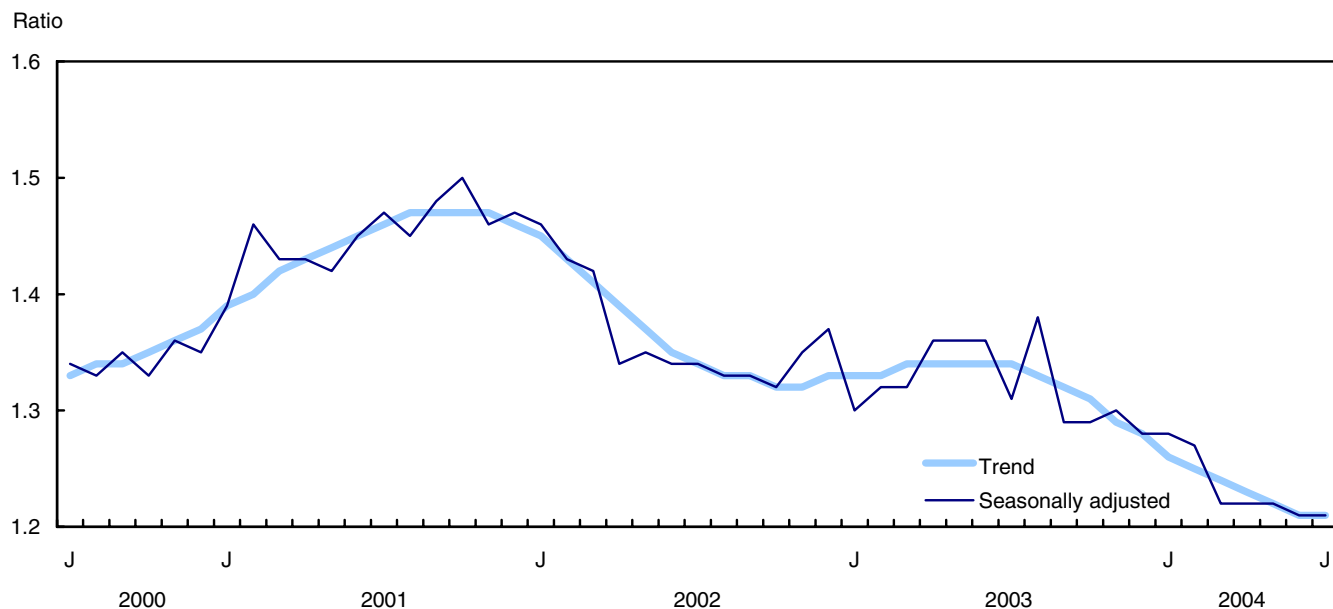
Even though manufacturers have been rebuilding their inventories, shipment activity has continued to grow at an equal pace resulting in record low levels for the inventory-to-shipment ratio. In July, the ratio held constant at 1.21. This is the lowest level of the ratio since the start of the current series in 1992.

Canada’s ratio is in line with that of the United States where the ongoing expansion in manufacturing contributed to the ratio holding, for the fourth consecutive month, at 1.23 in July.

The finished-products inventory-to-shipment ratio also held constant at 0.41, 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 3

Inventory-to-shipment ratio holds at record low



Manufacturers secure more new orders

Manufacturers continued to secure more new orders, as widespread increases resulted in a strong 1.4% increase to \$50.9 billion in July. Orders were up an impressive 15.0% since November’s recent low of \$44.2 billion.

Increases were primarily among durable good industries. Aerospace led all industries with a surge in new orders of 50.0% in July. Machinery (+5.5%) and fabricated metals (+3.3%) also increased orders in July.

Manufacturers see unfilled orders accumulate

Unfilled orders increased 1.7% to \$38 billion in July and have been steadily accumulating since the start of the year. Canadian manufacturers continue to benefit from an improved global economy as unfilled orders are now 8.6% above levels at the close of 2003. Strong increases reported by the machinery (+3.2%), fabricated metals (+3.4%) and aerospace (+0.7%) industries contributed to the growth in the backlog of orders. A decline reported by the computer and electronic products (-2.6%) and motor vehicle parts (-1.8%) industries partially offset the widespread growth in orders.

Chart 4

Unfilled orders continue to accumulate

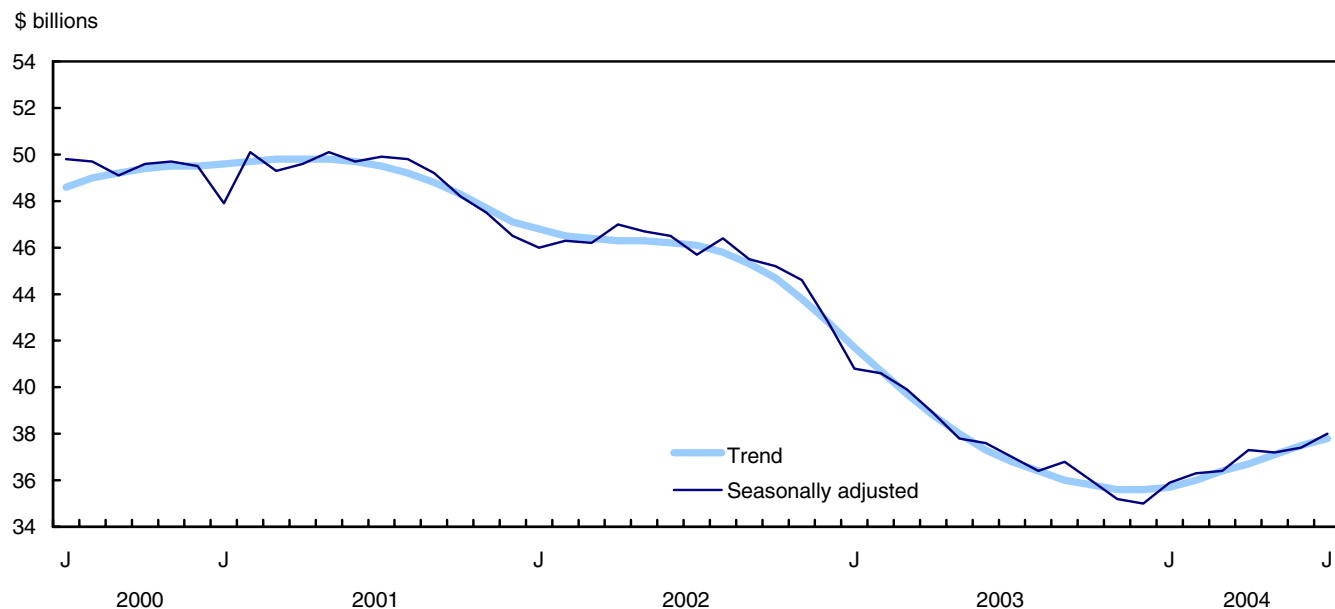


Chart 5

Inventories - Monthly change in trend

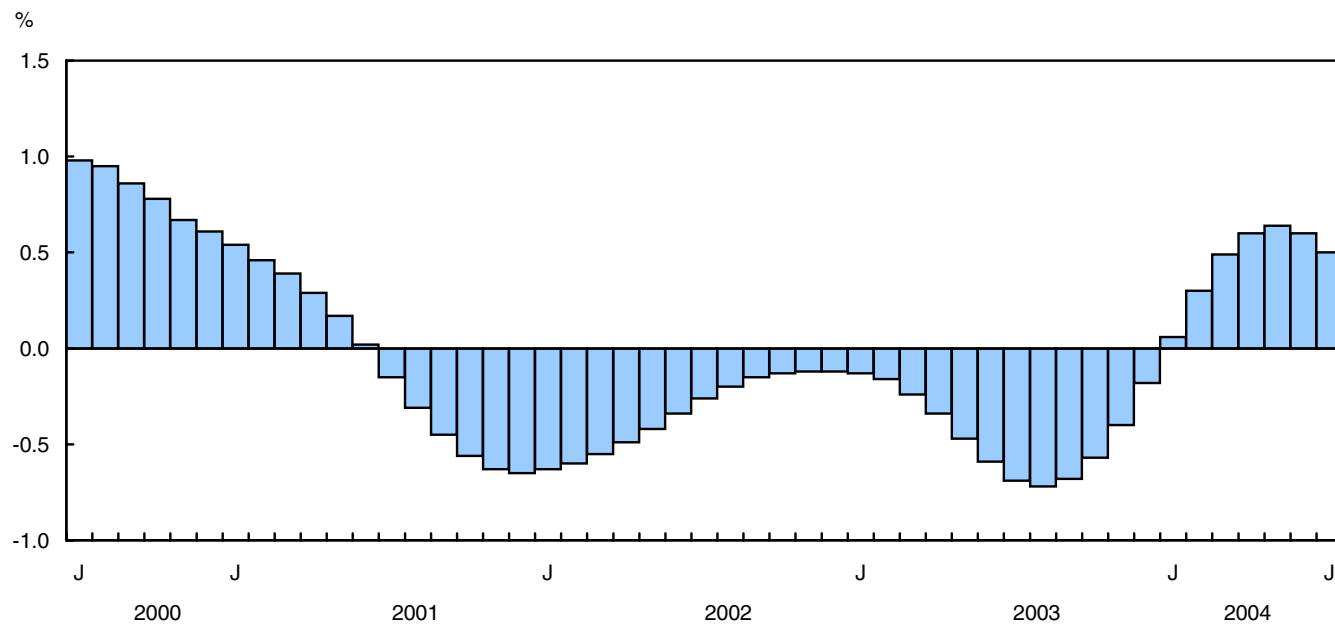


Chart 6

Shipments - Monthly change in trend

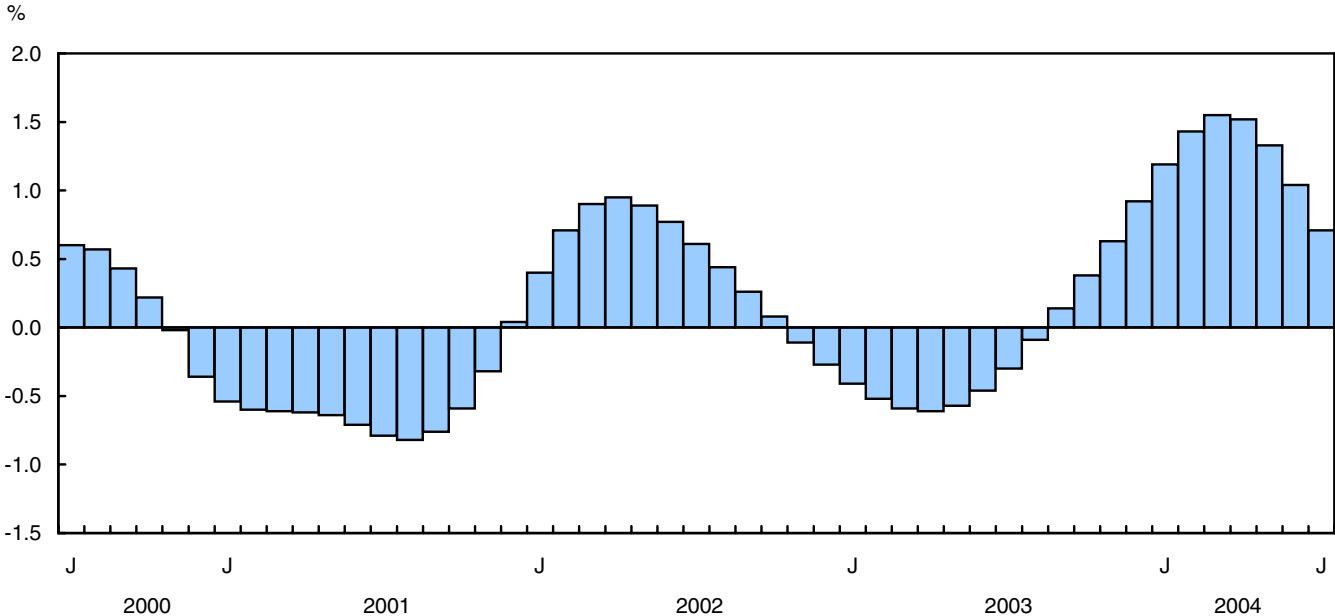
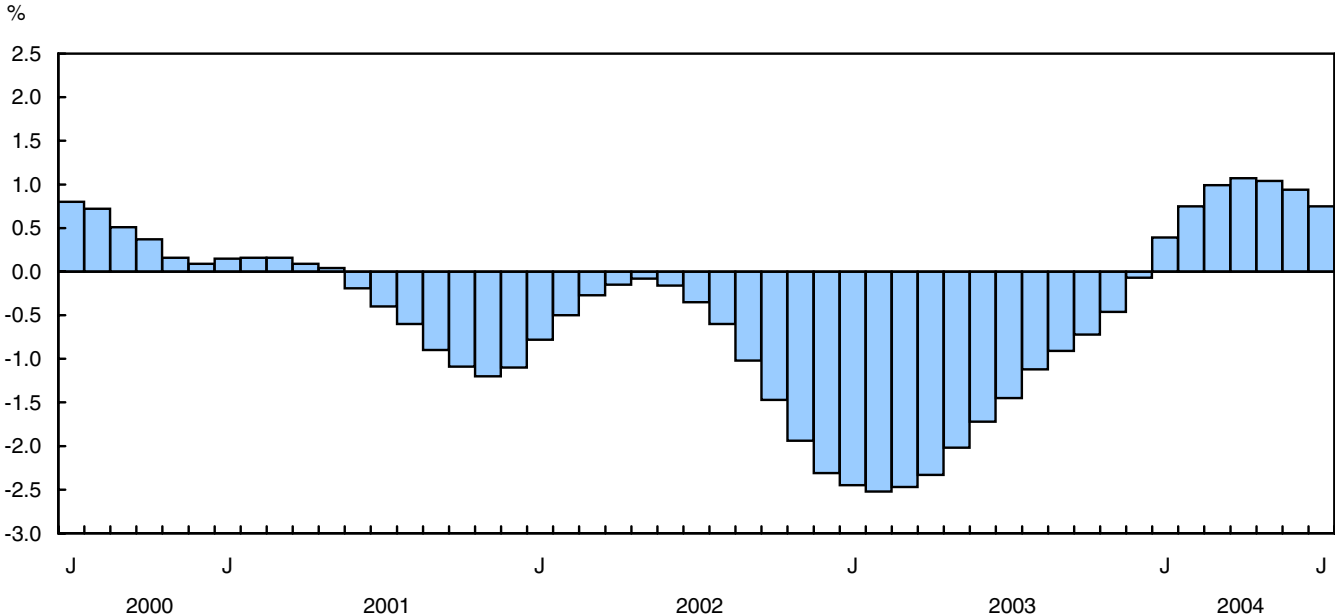


Chart 7

Unfilled orders - Monthly change in trend



Note to readers

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

Durable goods industries include wood products, non-metallic mineral products, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment, 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
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A note on CANSIM

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

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							
July 2003	41,706	59,485	37,357	41,482	45,735	60,129	37,020	45,179
August 2003	43,610	59,420	36,817	43,069	43,290	59,541	36,433	42,702
September 2003	47,961	58,801	37,228	48,372	45,818	59,307	36,838	46,223
October 2003	48,508	58,200	36,005	47,286	45,373	58,748	35,984	44,519
November 2003	44,983	58,646	35,049	44,027	44,993	58,708	35,204	44,213
December 2003	42,991	57,195	34,653	42,595	45,678	58,301	35,020	45,493
January 2004	42,408	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	51,378	60,744	37,491	51,653	49,269	60,120	37,250	49,240
June 2004	53,583	60,263	37,351	53,443	50,010	60,468	37,405	50,165
July 2004	45,505	60,307	38,305	46,460	50,241	60,816	38,026	50,861

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
July 2003	2.6	-0.3	-0.6	-0.7	1.31	1.34	-1.5	-1.5	1.9	-0.1
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	0.1	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	0.8	0.1	1.7
March 2004	4.3	1.6	0.3	0.5	1.22	1.24	0.0	1.0	3.4	1.7
April 2004	0.8	1.5	0.8	0.6	1.22	1.23	2.5	1.1	2.7	1.6
May 2004	1.1	1.3	1.4	0.6	1.22	1.22	-0.1	1.0	-0.9	1.3
June 2004	1.5	1.0	0.6	0.6	1.21	1.21	0.4	0.9	1.9	1.0
July 2004	0.5	0.7	0.6	0.5	1.21	1.21	1.7	0.8	1.4	0.6

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							
July 2003	5,724	3,055	1,561	5,737	8,911	3,144	1,575	8,894
August 2003	7,339	3,005	1,617	7,395	7,307	3,033	1,614	7,346
September 2003	8,696	3,167	1,649	8,728	8,337	3,164	1,624	8,347
October 2003	9,022	3,082	1,710	9,083	8,286	3,110	1,680	8,342
November 2003	8,116	3,166	1,771	8,177	7,980	3,093	1,730	8,030
December 2003	7,139	3,001	1,797	7,165	8,233	3,067	1,765	8,267
January 2004	7,785	3,091	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	9,554	3,513	2,070	9,587	8,899	3,445	2,102	8,918
June 2004	10,218	3,341	2,022	10,169	8,955	3,405	2,080	8,932
July 2004	5,633	3,364	2,070	5,681	8,949	3,460	2,118	8,988

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
July 2003	7.3	-0.9	0.1	-0.5	0.35	0.38	-1.1	-0.1	7.0	-0.7
August 2003	-18.0	-0.8	-3.5	-0.4	0.42	0.38	2.5	0.7	-17.4	-0.6
September 2003	14.1	-0.5	4.3	-0.2	0.38	0.38	0.7	1.5	13.6	-0.4
October 2003	-0.6	-0.3	-1.7	0.1	0.38	0.38	3.5	2.1	-0.1	-0.2
November 2003	-3.7	0.0	-0.5	0.4	0.39	0.38	3.0	2.7	-3.7	0.1
December 2003	3.2	0.4	-0.8	0.9	0.37	0.38	2.0	3.2	3.0	0.5
January 2004	-0.1	0.9	-0.1	1.3	0.37	0.38	2.1	3.5	-0.1	0.9
February 2004	-1.1	1.3	4.9	1.7	0.40	0.39	3.2	3.6	-0.9	1.4
March 2004	7.1	1.6	4.7	1.8	0.39	0.39	6.2	3.3	7.7	1.6
April 2004	1.5	1.6	4.2	1.7	0.40	0.39	5.5	2.9	1.4	1.5
May 2004	0.8	1.4	-1.7	1.5	0.39	0.39	0.9	2.4	-0.2	1.2
June 2004	0.6	1.0	-1.1	1.1	0.38	0.39	-1.1	1.8	0.2	0.9
July 2004	-0.1	0.6	1.6	0.7	0.39	0.39	1.9	1.3	0.6	0.5

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							
July 2003	35,982	56,430	35,796	35,745	36,823	56,984	35,446	36,285
August 2003	36,271	56,416	35,199	35,674	35,982	56,508	34,819	35,356
September 2003	39,265	55,633	35,579	39,644	37,482	56,143	35,213	37,876
October 2003	39,487	55,118	34,295	38,203	37,087	55,638	34,303	36,177
November 2003	36,867	55,480	33,278	35,850	37,013	55,615	33,474	36,183
December 2003	35,852	54,194	32,856	35,430	37,445	55,234	33,255	37,226
January 2004	34,622	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	41,824	57,231	35,421	42,065	40,370	56,675	35,148	40,322
June 2004	43,365	56,922	35,329	43,274	41,055	57,063	35,326	41,233
July 2004	39,873	56,944	36,235	40,778	41,292	57,356	35,907	41,873

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
July 2003	1.5	-0.2	-0.6	-0.7	1.55	1.56	-1.5	-1.5	0.7	0.1
August 2003	-2.3	0.1	-0.8	-0.7	1.57	1.54	-1.8	-1.2	-2.6	0.4
September 2003	4.2	0.3	-0.6	-0.7	1.50	1.53	1.1	-1.0	7.1	0.5
October 2003	-1.1	0.5	-0.9	-0.6	1.50	1.51	-2.6	-0.9	-4.5	0.7
November 2003	-0.2	0.8	0.0	-0.4	1.50	1.49	-2.4	-0.6	0.0	1.0
December 2003	1.2	1.0	-0.7	-0.2	1.48	1.47	-0.7	-0.2	2.9	1.4
January 2004	0.4	1.3	0.5	0.0	1.48	1.46	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	0.4	1.40	1.42	-0.3	0.9	2.5	1.8
April 2004	0.6	1.5	0.6	0.5	1.40	1.41	2.4	1.0	2.9	1.6
May 2004	1.1	1.3	1.6	0.6	1.40	1.40	-0.1	1.0	-1.0	1.3
June 2004	1.7	1.1	0.7	0.6	1.39	1.39	0.5	0.9	2.3	1.0
July 2004	0.6	0.7	0.5	0.5	1.39	1.39	1.6	0.7	1.6	0.6

Table 4-1

Shipments by major group and selected industries - Unadjusted

NAICS Code	Current periods				Previous year		Year to date		Annual		
	July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% change from 2003	2004	% change from 2002	2003	
\$millions											
Food manufacturing	311	5,968	6,108	5,967	5,426	5,329	5,439	8.6	39,092	1.7	63,436
Beverage and tobacco product manufacturing	312	1,138	1,172	1,093	963	1,182	1,142	0.7	6,880	3.2	12,032
Textile mills	313	242	303	296	282	231	297	-3.5	1,937	-11.0	3,421
Textile product mills	314	174	200	197	193	187	205	-6.0	1,292	-10.3	2,297
Clothing manufacturing	315	502	500	526	574	567	511	-6.3	3,765	-6.3	7,075
Leather and allied product manufacturing	316	44	40	41	41	51	47	-15.0	309	-13.7	743
Wood product manufacturing	321	3,267	3,563	3,516	3,261	2,647	2,655	21.6	21,687	-3.4	31,248
Paper manufacturing	322	2,822	2,862	2,852	2,718	2,753	2,710	-2.1	19,280	-3.6	33,204
Printing and related support activities	323	885	983	979	979	898	930	-0.1	6,649	-0.7	11,590
Petroleum and coal products manufacturing	324	4,009	3,794	3,680	3,314	3,066	2,855	11.4	24,664	9.0	37,355
Chemical manufacturing	325	3,755	4,061	4,160	3,859	3,247	3,593	6.8	26,433	3.6	41,187
Plastics and rubber products manufacturing	326	1,988	2,367	2,270	2,230	1,935	2,140	2.9	14,904	1.0	24,722
Non-metallic mineral product manufacturing	327	1,149	1,269	1,142	1,014	1,179	1,151	4.4	6,874	5.3	11,994
Primary metal manufacturing	331	3,418	3,855	3,753	3,744	2,839	2,925	16.7	25,437	2.3	37,606
Fabricated metal product manufacturing	332	2,695	3,090	2,901	2,788	2,527	2,644	8.0	19,081	0.4	31,026
Machinery manufacturing	333	2,220	2,512	2,264	2,260	2,079	2,126	5.3	15,617	-2.9	25,576
Computer and electronic product manufacturing	334	1,463	1,870	1,645	1,504	1,325	1,635	11.9	11,479	-13.1	18,790
Electrical equipment, appliance and component manufacturing	335	787	949	881	887	773	877	4.9	6,046	-5.7	9,984
Transportation equipment manufacturing	336	7,234	12,141	11,333	11,581	7,180	10,683	2.4	74,094	-3.9	120,949
Motor vehicle manufacturing	3361	3,708	7,314	6,621	6,579	3,818	6,329	-0.1	42,120	-6.4	69,258
Motor vehicle body and trailer manufacturing	3362	277	349	359	334	266	319	-0.4	2,215	0.1	3,695
Motor vehicle parts manufacturing	3363	1,925	2,904	2,933	3,013	1,906	2,674	5.4	19,199	-0.1	31,433
Aerospace product and parts manufacturing	3364	938	1,146	978	1,216	879	935	10.6	7,492	1.5	11,586
Railroad rolling stock manufacturing	3365	177	187	202	194	112	231	-10.5	1,305	-7.7	2,370
Ship and boat building	3366	101	121	120	120	82	93	10.2	764	-5.4	1,100
Furniture and related product manufacturing	337	1,130	1,238	1,186	1,188	1,105	1,189	1.8	8,252	1.2	14,035
Miscellaneous manufacturing	339	614	706	695	652	609	632	6.5	4,497	3.5	7,495
Non-durable goods industries¹		21,528	22,390	22,061	20,580	19,445	19,870	5.0	145,204	1.5	237,062
Durable goods industries²		23,978	31,193	29,317	28,880	22,261	26,517	7.6	193,066	-2.6	308,703
Manufacturing		45,505	53,583	51,378	49,460	41,706	46,387	6.5	338,271	-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 June	Current periods				Change from previous month			Trend change from previous month			
			July 2004	June 2004	May 2004	Apr. 2004	July 2004	June 2004	May 2004	July 2004	June 2004	May 2004	Apr. 2004
			\$ millions				percentage						
Food manufacturing	311	82	5,856	5,773	5,710	5,656	1.4	1.1	1.0	0.6	0.8	0.9	0.9
Beverage and tobacco product manufacturing	312	-34	980	1,013	1,016	997	-3.3	-0.3	1.9	-0.1	-0.1	-0.1	-0.1
Textile mills	313	15	297	282	278	275	5.3	1.5	0.9	0.2	0.2	0.2	0.1
Textile product mills	314	-2	182	184	184	185	-1.3	0.2	-0.5	-0.2	-0.2	-0.1	0.0
Clothing manufacturing	315	-17	540	557	560	566	-3.1	-0.4	-1.1	-0.5	-0.6	-0.7	-0.8
Leather and allied product manufacturing	316	6	55	49	48	53	11.6	0.9	-9.3	-1.5	-2.4	-3.2	-3.6
Wood product manufacturing	321	71	3,287	3,216	3,216	3,135	2.2	0.0	2.6	1.1	1.9	2.6	3.0
Paper manufacturing	322	25	2,864	2,838	2,865	2,730	0.9	-0.9	5.0	0.7	1.0	1.3	1.5
Printing and related support activities	323	-6	969	975	994	965	-0.6	-1.9	3.0	0.1	0.2	0.3	0.3
Petroleum and coal products manufacturing	324	67	3,893	3,826	3,741	3,484	1.7	2.3	7.4	2.0	2.8	3.5	3.9
Chemical manufacturing	325	98	3,906	3,808	3,733	3,688	2.6	2.0	1.2	1.2	1.5	1.7	1.8
Plastics and rubber products manufacturing	326	33	2,185	2,152	2,102	2,111	1.5	2.4	-0.4	0.7	0.7	0.8	0.7
Non-metallic mineral product manufacturing	327	-27	1,029	1,056	1,031	1,056	-2.6	2.5	-2.4	-0.3	-0.1	0.2	0.6
Primary metal manufacturing	331	64	3,803	3,739	3,658	3,668	1.7	2.2	-0.3	0.8	1.4	1.9	2.3
Fabricated metal product manufacturing	332	-60	2,848	2,908	2,815	2,796	-2.1	3.3	0.7	0.6	0.8	1.0	1.2
Machinery manufacturing	333	7	2,355	2,349	2,264	2,242	0.3	3.8	1.0	1.0	1.4	1.6	1.6
Computer and electronic product manufacturing	334	-66	1,641	1,707	1,672	1,697	-3.9	2.1	-1.5	-0.9	-0.6	-0.2	0.4
Electrical equipment, appliance and component manufacturing	335	-30	848	878	867	868	-3.5	1.3	-0.1	-0.5	-0.3	-0.1	0.1
Transportation equipment manufacturing	336	11	10,844	10,832	10,651	10,713	0.1	1.7	-0.6	0.7	1.0	1.3	1.5
Motor vehicle manufacturing	3361	-24	6,242	6,265	6,098	6,018	-0.4	2.7	1.3	1.1	1.5	2.0	2.2
Motor vehicle body and trailer manufacturing	3362	12	332	320	319	307	3.6	0.5	4.0	1.4	1.6	1.6	1.4
Motor vehicle parts manufacturing	3363	17	2,707	2,690	2,801	2,810	0.7	-4.0	-0.3	-0.4	-0.2	0.0	0.3
Aerospace product and parts manufacturing	3364	-58	1,099	1,157	1,022	1,155	-5.0	13.2	-11.5	0.6	0.9	1.3	1.7
Railroad rolling stock manufacturing	3365	80	253	173	199	205	46.2	-13.1	-3.1	4.2	4.6	4.4	3.6
Ship and boat building	3366	-4	103	107	92	93	-3.7	16.0	-0.7	1.4	1.4	1.1	0.6
Furniture and related product manufacturing	337	16	1,207	1,191	1,188	1,189	1.4	0.2	-0.1	0.4	0.4	0.3	0.3
Miscellaneous manufacturing	339	-21	655	676	676	674	-3.2	0.1	0.3	-0.2	0.2	0.8	1.2
Non-durable goods industries¹		267	21,724	21,458	21,230	20,711	1.2	1.1	2.5	0.9	1.2	1.4	1.5
Durable goods industries²		-36	28,516	28,552	28,039	28,039	-0.1	1.8	0.0	0.6	0.9	1.3	1.5
Manufacturing		231	50,241	50,010	49,269	48,749	0.5	1.5	1.1	0.7	1.0	1.3	1.5

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	
		July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% change from 2003	Average 2004	% change from 2002	2003
\$millions											
Food manufacturing	311	4,719	4,751	4,679	4,677	4,489	4,473	3.7	4,675	0.2	4,564
Beverage and tobacco product manufacturing	312	1,631	1,691	1,678	1,680	1,662	1,676	-1.3	1,660	2.7	1,650
Textile mills	313	482	484	476	474	537	527	-10.8	475	-8.0	519
Textile product mills	314	360	360	359	357	364	371	-4.2	357	-4.2	365
Clothing manufacturing	315	1,292	1,283	1,303	1,318	1,526	1,552	-10.9	1,317	0.9	1,451
Leather and allied product manufacturing	316	157	153	136	126	171	166	-10.6	132	-9.8	141
Wood product manufacturing	321	4,139	4,240	4,407	4,678	4,268	4,377	-6.5	4,576	-0.9	4,533
Paper manufacturing	322	3,605	3,592	3,584	3,578	3,618	3,651	-2.2	3,557	-1.1	3,588
Printing and related support activities	323	870	836	839	861	895	871	-2.2	854	-2.4	870
Petroleum and coal products manufacturing	324	2,341	2,277	2,293	2,291	2,171	2,063	7.9	2,214	0.8	2,009
Chemical manufacturing	325	6,101	6,055	6,094	6,228	5,502	5,668	8.1	6,116	9.3	5,652
Plastics and rubber products manufacturing	326	2,333	2,345	2,365	2,344	2,248	2,292	0.6	2,331	4.4	2,279
Non-metallic mineral product manufacturing	327	1,137	1,142	1,164	1,172	1,141	1,150	0.1	1,152	-0.2	1,125
Primary metal manufacturing	331	5,088	4,917	4,764	4,534	4,922	4,943	-5.7	4,732	-1.5	4,902
Fabricated metal product manufacturing	332	4,107	3,932	3,801	3,733	3,740	3,753	-0.6	3,755	1.3	3,676
Machinery manufacturing	333	4,651	4,647	4,667	4,558	4,457	4,542	0.4	4,574	-3.2	4,522
Computer and electronic product manufacturing	334	3,838	3,795	4,074	3,952	4,339	4,311	-11.6	3,981	-11.3	4,398
Electrical equipment, appliance and component manufacturing	335	1,943	1,905	1,938	1,854	1,849	1,870	-3.0	1,863	-2.8	1,870
Transportation equipment manufacturing	336	9,119	9,447	9,710	9,298	9,127	9,574	-7.3	9,171	-17.9	9,637
Motor vehicle manufacturing	3361	1,442	1,441	1,574	1,647	1,205	1,246	12.3	1,472	-8.6	1,288
Motor vehicle body and trailer manufacturing	3362	455	469	449	464	450	473	-7.3	450	12.3	466
Motor vehicle parts manufacturing	3363	1,922	1,900	1,939	1,905	1,850	1,833	2.0	1,896	13.1	1,847
Aerospace product and parts manufacturing	3364	4,244	4,587	4,701	4,293	4,508	4,827	-13.6	4,342	-30.5	4,875
Railroad rolling stock manufacturing	3365	831	800	793	741	878	920	-18.4	757	-7.5	876
Ship and boat building	3366	100	100	107	110	112	110	-13.4	112	-1.8	129
Furniture and related product manufacturing	337	1,200	1,216	1,195	1,205	1,242	1,234	-4.6	1,202	2.7	1,238
Miscellaneous manufacturing	339	1,195	1,197	1,218	1,267	1,217	1,218	1.0	1,241	4.1	1,217
Non-durable goods industries¹		23,891	23,826	23,806	23,935	23,184	23,311	1.9	23,690	2.3	23,087
Durable goods industries²		36,416	36,437	36,937	36,251	36,301	36,971	-5.1	36,248	-7.1	37,118
Manufacturing		60,307	60,263	60,744	60,186	59,485	60,282	-2.5	59,938	-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 June	Current periods				Change from previous month			Trend change from previous month				
			July 2004	June 2004	May 2004	Apr. 2004	July 2004	June 2004	May 2004	July 2004	June 2004	May 2004	Apr. 2004	
			\$ millions				percentage							
Food manufacturing	311	4	4,789	4,785	4,755	4,769	0.1	0.6	-0.3	0.3	0.4	0.6	0.7	
Beverage and tobacco product manufacturing	312	-19	1,628	1,647	1,627	1,625	-1.2	1.2	0.1	0.0	0.0	0.1	0.1	
Textile mills	313	0	486	485	476	471	0.1	2.1	1.1	0.6	0.7	0.7	0.4	
Textile product mills	314	3	362	359	357	353	0.8	0.4	1.3	0.5	0.6	0.5	0.4	
Clothing manufacturing	315	17	1,241	1,224	1,282	1,311	1.3	-4.5	-2.2	-1.1	-1.5	-1.7	-1.9	
Leather and allied product manufacturing	316	0	130	130	127	126	0.1	2.3	0.8	0.5	0.4	0.1	-0.2	
Wood product manufacturing	321	-35	4,416	4,451	4,414	4,329	-0.8	0.8	2.0	0.7	0.8	0.8	0.7	
Paper manufacturing	322	-15	3,579	3,594	3,517	3,506	-0.4	2.2	0.3	0.4	0.4	0.3	0.1	
Printing and related support activities	323	6	862	856	855	855	0.7	0.0	0.0	0.2	0.1	0.0	-0.1	
Petroleum and coal products manufacturing	324	-26	2,233	2,258	2,273	2,186	-1.1	-0.7	4.0	0.8	1.3	1.7	2.1	
Chemical manufacturing	325	70	6,176	6,106	6,013	5,967	1.2	1.5	0.8	0.4	0.5	0.5	0.6	
Plastics and rubber products manufacturing	326	23	2,354	2,331	2,308	2,285	1.0	1.0	1.0	0.5	0.6	0.6	0.4	
Non-metallic mineral product manufacturing	327	4	1,128	1,124	1,116	1,122	0.4	0.7	-0.5	0.1	0.1	0.0	-0.1	
Primary metal manufacturing	331	81	5,031	4,950	4,826	4,646	1.6	2.6	3.9	0.9	1.1	1.1	1.0	
Fabricated metal product manufacturing	332	165	4,054	3,889	3,756	3,712	4.2	3.5	1.2	1.6	1.9	2.0	1.9	
Machinery manufacturing	333	3	4,652	4,649	4,618	4,533	0.1	0.7	1.9	0.3	0.4	0.5	0.6	
Computer and electronic product manufacturing	334	-21	3,897	3,918	4,003	3,930	-0.5	-2.1	1.9	-0.1	-0.3	-0.5	-0.8	
Electrical equipment, appliance and component manufacturing	335	57	1,935	1,878	1,904	1,823	3.0	-1.4	4.5	1.0	1.1	1.2	1.1	
Transportation equipment manufacturing	336	26	9,454	9,427	9,487	9,304	0.3	-0.6	2.0	0.6	0.9	1.0	1.0	
Motor vehicle manufacturing	3361	20	1,515	1,495	1,511	1,608	1.3	-1.1	-6.0	0.9	1.6	2.4	3.1	
Motor vehicle body and trailer manufacturing	3362	-1	460	461	448	446	-0.3	2.9	0.5	1.1	1.3	1.3	1.2	
Motor vehicle parts manufacturing	3363	35	1,946	1,910	1,934	1,898	1.8	-1.2	1.9	0.5	0.6	0.7	0.8	
Aerospace product and parts manufacturing	3364	-63	4,463	4,526	4,556	4,362	-1.4	-0.7	4.4	0.5	0.6	0.6	0.6	
Railroad rolling stock manufacturing	3365	31	831	800	793	741	3.8	0.9	7.0	2.1	2.8	3.0	2.4	
Ship and boat building	3366	0	108	108	112	112	-0.1	-3.1	0.0	-1.5	-1.8	-1.9	-1.9	
Furniture and related product manufacturing	337	-5	1,200	1,206	1,187	1,201	-0.5	1.6	-1.1	0.3	0.3	0.2	0.1	
Miscellaneous manufacturing	339	11	1,211	1,200	1,217	1,252	0.9	-1.4	-2.8	-0.4	-0.5	-0.5	-0.3	
Non-durable goods industries¹		63	23,839	23,776	23,592	23,453	0.3	0.8	0.6	0.4	0.5	0.6	0.6	
Durable goods industries²		286	36,977	36,692	36,528	35,851	0.8	0.4	1.9	0.5	0.6	0.7	0.6	
Manufacturing		348	60,816	60,468	60,120	59,304	0.6	0.6	1.4	0.5	0.6	0.6	0.6	

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		
	July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	Average 2004	% Change from 2002	2003	
\$millions											
Textile mills	313	223	225	227	213	220	220	-11.6	217	-20.6	233
Textile product mills	314	95	91	88	92	82	77	-3.3	89	6.6	86
Clothing manufacturing	315	209	224	215	209	210	234	-7.2	199	3.6	199
Leather and allied product manufacturing	316	25	25	25	24	33	37	-18.6	24	-2.2	28
Plastics and rubber products manufacturing	326	435	410	431	453	343	336	13.0	411	1.9	366
Primary metal manufacturing	331	1,949	1,970	1,878	1,856	1,714	1,706	5.8	1,874	-2.8	1,757
Fabricated metal product manufacturing	332	4,265	4,125	4,142	4,098	3,433	3,418	11.8	3,936	-1.7	3,522
Machinery manufacturing	333	5,202	5,040	5,002	4,779	4,286	4,217	8.1	4,801	-14.5	4,380
Computer and electronic product manufacturing	334	3,109	3,191	3,034	3,100	3,312	3,347	-12.3	3,155	-5.5	3,483
Electrical equipment, appliance and component manufacturing	335	888	860	861	841	876	859	-7.2	862	-3.5	901
Transportation equipment manufacturing	336	18,883	18,298	18,866	18,859	19,906	20,299	-11.6	18,653	-26.7	20,074
Motor vehicle manufacturing	3361	899	838	866	814	531	526	36.7	778	-25.1	566
Motor vehicle body and trailer manufacturing	3362	470	467	491	504	405	419	4.9	475	-1.5	430
Motor vehicle parts manufacturing	3363	1,171	1,183	1,204	1,222	1,030	1,022	14.0	1,202	25.4	1,093
Aerospace product and parts manufacturing	3364	11,691	11,310	11,898	11,902	12,846	13,085	-15.7	11,825	-34.2	13,167
Ship and boat building	3366	32	34	42	49	101	111	-43.1	48	230.1	83
Miscellaneous manufacturing	339	183	180	188	187	157	152	17.8	178	-13.4	162
Non-durable goods industries¹		2,184	2,142	2,019	2,019	2,214	2,224	-2.3	2,003	7.1	2,029
Durable goods industries²		36,122	35,209	35,472	35,196	35,144	35,357	-5.2	34,931	-18.7	35,629
Manufacturing		38,305	37,351	37,491	37,216	37,357	37,581	-5.0	36,934	-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 June	Current periods				Change from previous month			Trend change from previous month						
		July 2004	June 2004	May 2004	Apr. 2004	July 2004	June 2004	May 2004	July 2004	June 2004	May 2004	Apr. 2004			
\$ millions												percentage			
Textile mills	313	0	227	227	226	208	0.2	0.2	8.6	1.3	1.4	1.2	0.9		
Textile product mills	314	1	94	93	89	85	0.9	4.6	4.4	1.7	2.3	2.4	2.1		
Clothing manufacturing	315	2	194	192	186	185	1.1	3.1	0.8	0.7	0.8	0.7	0.5		
Leather and allied product manufacturing	316	1	19	18	18	20	7.7	-2.9	-7.5	-2.0	-4.4	-6.7	-8.1		
Plastics and rubber products manufacturing	326	11	435	424	426	449	2.6	-0.4	-5.3	0.5	1.2	2.0	2.6		
Primary metal manufacturing	331	8	1,934	1,927	1,821	1,793	0.4	5.8	1.6	0.7	1.0	1.1	1.1		
Fabricated metal product manufacturing	332	139	4,265	4,125	4,142	4,098	3.4	-0.4	1.1	1.8	2.5	3.0	3.3		
Machinery manufacturing	333	162	5,202	5,040	5,002	4,779	3.2	0.8	4.7	1.3	1.7	1.9	2.1		
Computer and electronic product manufacturing	334	-82	3,109	3,191	3,034	3,100	-2.6	5.2	-2.2	0.0	-0.1	-0.2	-0.4		
Electrical equipment, appliance and component manufacturing	335	28	888	860	861	841	3.3	-0.2	2.4	0.7	0.8	0.9	0.8		
Transportation equipment manufacturing	336	282	18,713	18,431	18,736	19,043	1.5	-1.6	-1.6	0.3	0.4	0.5	0.5		
Motor vehicle manufacturing	3361	61	899	838	866	814	7.3	-3.2	6.3	3.5	4.4	5.3	6.1		
Motor vehicle body and trailer manufacturing	3362	7	481	474	480	479	1.5	-1.3	0.2	0.7	1.1	1.6	2.0		
Motor vehicle parts manufacturing	3363	-22	1,219	1,241	1,236	1,269	-1.8	0.4	-2.6	-0.3	0.1	0.5	1.0		
Aerospace product and parts manufacturing	3364	83	11,465	11,382	11,751	12,067	0.7	-3.1	-2.6	-0.4	-0.4	-0.3	-0.1		
Ship and boat building	3366	-1	30	31	39	46	-4.1	-20.2	-15.1	-13.7	-14.8	-14.4	-13.4		
Miscellaneous manufacturing	339	1	189	188	187	189	0.7	0.4	-0.8	0.5	1.0	1.5	1.9		
Non-durable goods industries¹		45	2,166	2,121	1,978	1,975	2.1	7.2	0.1	2.3	2.7	2.5	1.9		
Durable goods industries²		576	35,860	35,284	35,272	35,304	1.6	0.0	-0.1	0.7	0.9	1.0	1.0		
Manufacturing		620	38,026	37,405	37,250	37,279	1.7	0.4	-0.1	0.8	0.9	1.0	1.1		

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		
	July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	2004	% Change from 2002	2003	
\$millions											
Textile mills	313	241	301	310	288	230	289	-0.1	1,952	-13.6	3,356
Textile product mills	314	178	203	193	195	192	198	-4.5	1,313	-11.2	2,290
Clothing manufacturing	315	487	509	532	588	543	508	-6.0	3,816	-6.4	7,066
Leather and allied product manufacturing	316	44	40	41	38	47	51	-17.8	309	-12.6	747
Plastics and rubber products manufacturing	326	2,013	2,346	2,248	2,252	1,943	2,104	4.0	15,004	0.1	24,666
Primary metal manufacturing	331	3,397	3,947	3,775	3,716	2,847	2,861	18.3	25,681	0.8	37,522
Fabricated metal product manufacturing	332	2,835	3,073	2,946	3,103	2,542	2,565	12.2	19,876	0.7	31,096
Machinery manufacturing	333	2,382	2,550	2,487	2,379	2,148	2,033	13.3	16,457	-0.7	25,351
Computer and electronic product manufacturing	334	1,381	2,028	1,578	1,522	1,290	1,367	16.7	11,410	-17.1	18,169
Electrical equipment, appliance and component manufacturing	335	816	948	901	849	790	797	7.8	6,126	-6.8	9,835
Transportation equipment manufacturing	336	7,819	11,572	11,340	11,975	6,788	10,479	11.1	75,055	-6.3	114,188
Motor vehicle manufacturing	3361	3,769	7,287	6,672	6,644	3,823	6,334	1.0	42,427	-6.5	69,172
Motor vehicle body and trailer manufacturing	3362	279	326	345	340	252	293	5.2	2,308	-2.2	3,637
Motor vehicle parts manufacturing	3363	1,913	2,883	2,915	3,015	1,914	2,664	5.5	19,166	-1.0	31,557
Aerospace product and parts manufacturing	3364	1,319	558	975	1,262	640	388	250.4	7,658	-17.0	5,676
Ship and boat building	3366	99	113	114	113	72	94	-4.1	732	-3.2	1,134
Miscellaneous manufacturing	339	618	698	696	658	614	633	7.1	4,522	4.1	7,498
Non-durable goods industries¹		21,570	22,513	22,060	20,617	19,434	20,197	5.0	145,653	1.4	236,934
Durable goods industries²		24,890	30,930	29,592	29,716	22,048	25,747	12.8	196,270	-3.8	301,074
Manufacturing		46,460	53,443	51,653	50,332	41,482	45,943	9.4	341,924	-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 June	Current periods				Change from previous month			Trend change from previous month						
		July 2004	June 2004	May 2004	Apr. 2004	July 2004	June 2004	May 2004	July 2004	June 2004	May 2004	Apr. 2004			
\$ millions												percentage			
Textile mills	313	15	297	282	295	284	5.3	-4.5	4.0	0.2	0.3	0.4	0.5		
Textile product mills	314	-6	183	188	188	186	-3.0	0.4	1.0	-0.4	-0.2	0.1	0.3		
Clothing manufacturing	315	-21	542	563	561	564	-3.7	0.3	-0.6	-0.5	-0.6	-0.6	-0.6		
Leather and allied product manufacturing	316	8	56	48	47	47	15.6	3.0	-0.8	-0.5	-1.3	-2.4	-3.4		
Plastics and rubber products manufacturing	326	46	2,196	2,150	2,079	2,135	2.1	3.4	-2.7	0.5	0.6	0.6	0.7		
Primary metal manufacturing	331	-34	3,811	3,845	3,686	3,635	-0.9	4.3	1.4	0.7	1.3	1.9	2.4		
Fabricated metal product manufacturing	332	96	2,987	2,891	2,860	3,111	3.3	1.1	-8.1	-0.3	0.2	0.8	1.4		
Machinery manufacturing	333	131	2,518	2,387	2,487	2,361	5.5	-4.0	5.3	0.3	1.0	1.2	1.4		
Computer and electronic product manufacturing	334	-305	1,559	1,864	1,606	1,715	-16.4	16.1	-6.4	-0.7	-0.4	0.2	0.9		
Electrical equipment, appliance and component manufacturing	335	-1	876	877	887	830	-0.1	-1.1	6.9	-0.6	-0.4	-0.1	0.3		
Transportation equipment manufacturing	336	599	11,126	10,526	10,345	11,210	5.7	1.8	-7.7	0.6	0.9	1.2	1.5		
Motor vehicle manufacturing	3361	65	6,303	6,238	6,149	6,082	1.0	1.4	1.1	0.9	1.4	1.9	2.1		
Motor vehicle body and trailer manufacturing	3362	25	339	314	320	313	7.8	-1.7	2.3	0.8	1.0	1.0	1.1		
Motor vehicle parts manufacturing	3363	-10	2,685	2,695	2,769	2,854	-0.4	-2.7	-3.0	-0.5	-0.4	-0.2	0.2		
Aerospace product and parts manufacturing	3364	394	1,182	788	705	1,263	50.0	11.7	-44.2	0.4	-0.2	-0.7	-0.3		
Ship and boat building	3366	3	102	99	85	84	2.6	16.2	1.5	2.8	2.4	1.7	0.8		
Miscellaneous manufacturing	339	-21	656	677	674	678	-3.1	0.4	-0.7	-0.3	0.1	0.7	1.2		
Non-durable goods industries¹		168	21,769	21,601	21,233	20,732	0.8	1.7	2.4	0.9	1.2	1.5	1.6		
Durable goods industries²		527	29,092	28,564	28,007	28,935	1.8	2.0	-3.2	0.4	0.8	1.2	1.6		
Manufacturing		696	50,861	50,165	49,240	49,667	1.4	1.9	-0.9	0.6	1.0	1.3	1.6		

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	
		July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	2004	% Change from 2002	2003
\$ millions											
311 Food manufacturing											
Animal food manufacturing	3111	452	441	448	445	423	397	3.8	3,043	-1.9	5,099
Starch and vegetable fat and oil manufacturing	31122	313	311	322	321	258	235	23.0	2,151	11.4	3,117
Sugar and confectionery product manufacturing	3113	308	314	306	296	293	292	3.5	2,085	10.0	3,764
Fruit and vegetable preserving and specialty food manufacturing	3114	541	508	506	520	473	469	6.2	3,596	-0.9	5,974
Dairy product manufacturing	3115	1,012	998	986	939	963	972	5.9	6,632	9.8	10,958
Meat product manufacturing	3116	1,776	1,766	1,760	1,596	1,355	1,321	17.3	11,473	-3.9	17,027
Cookie, cracker and pasta manufacturing	31182	130	130	133	131	122	124	2.3	909	-2.1	1,577
Other food manufacturing	3119	409	425	410	391	415	427	2.0	2,810	4.1	4,936
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	319	308	302	268	342	332	-3.1	1,891	12.7	3,336
Breweries	31212	448	460	407	345	415	385	16.1	2,496	1.0	3,858
Wineries	31213	62	78	65	58	63	62	13.1	422	-2.6	706
Distilleries	31214	48	59	52	49	64	57	-28.4	339	-18.0	831
Tobacco manufacturing	3122	260	267	268	243	298	306	-8.0	1,731	5.1	3,301
313 Textile mills											
Fibre, yarn and thread mills	3131	43	57	53	50	35	48	7.4	347	-12.6	547
Fabric mills	3132	147	187	186	176	146	186	-6.1	1,202	-10.6	2,180
Textile and fabric finishing and fabric coating	3133	51	59	58	56	49	63	-4.2	389	-10.8	694
314 Textile product mills											
Carpet and rug mills	31411	63	76	69	70	62	73	-6.0	472	-8.6	824
Textile bag and canvas mills	31491	24	26	22	22	29	27	-9.2	148	-30.9	267
315 Clothing manufacturing											
Hosiery and sock mills	31511	30	28	33	34	41	40	-16.9	233	-5.1	511
Other clothing knitting mills	31519	46	43	47	46	49	41	4.2	309	-0.4	587
Men's and boys' cut and sew clothing manufacturing	31522	119	135	142	159	155	153	-11.5	1,025	-4.6	2,078
Women's and girls' cut and sew clothing manufacturing	31523	195	176	188	210	209	170	-5.0	1,373	-3.5	2,471
Clothing accessories and other clothing manufacturing	3159	21	25	24	24	24	24	-1.6	159	-4.1	289
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	26	20	18	19	27	20	-1.9	157	-17.7	401
321 Wood product manufacturing											
Sawmills and wood preservation	3211	1,707	1,805	1,724	1,550	1,233	1,286	20.1	10,675	-16.1	14,961
Veneer, plywood and engineered wood product manufacturing	3212	794	888	951	956	676	617	43.6	5,889	19.5	7,928
Other wood product manufacturing	3219	766	870	841	755	738	752	5.8	5,123	6.2	8,359
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	1,987	1,976	2,016	1,890	1,847	1,815	0.5	13,404	-6.6	22,490
Paperboard container manufacturing	32221	434	460	429	429	477	463	-8.1	3,005	6.6	5,538
Paper bag and coated and treated paper manufacturing	32222	219	241	232	231	238	250	-10.2	1,637	0.8	3,033
Other converted paper product manufacturing	32229	134	137	133	129	138	132	-0.8	940	-2.7	1,624
323 Printing and related support activities											
Printing	32311	826	915	910	905	830	855	0.8	6,180	-1.5	10,730
Support activities for printing	32312	60	67	70	74	68	75	-10.1	469	10.5	860
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	3,750	3,517	3,462	3,142	2,806	2,615	11.9	23,195	10.6	34,729
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	268	284	294	270	253	253	8.7	1,920	12.8	3,023
Other basic organic chemical manufacturing	32519	350	332	325	331	261	277	10.8	2,280	-6.6	3,423
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	720	775	721	710	572	608	8.9	4,896	0.6	7,461
Pesticide and other agricultural chemical manufacturing	32532	13	77	91	103	12	89	21.3	491	21.2	444
Pharmaceutical and medicine manufacturing	3254	729	810	744	738	694	787	5.4	5,256	4.9	8,506
Paint and coating manufacturing	32551	205	203	189	189	183	196	6.3	1,277	3.5	2,028
Adhesive manufacturing	32552	81	79	78	66	70	64	8.2	485	8.4	772
Soap and cleaning compound manufacturing	32561	140	146	132	139	144	148	-9.7	940	-16.2	1,689
Toilet preparation manufacturing	32562	108	123	100	106	103	110	6.5	778	2.3	1,289
Printing ink manufacturing	32591	37	39	37	41	36	38	2.9	274	1.6	467
All other chemical product manufacturing	32599	360	375	343	349	328	318	6.1	2,458	2.8	3,989
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	182	197	192	175	168	167	7.4	1,166	2.5	1,836
Polystyrene foam product manufacturing	32614	50	57	52	56	46	54	11.6	343	7.3	561
Other plastic product manufacturing	32619	931	1,168	1,098	1,081	913	1,047	3.2	7,127	2.5	11,881
Other rubber product manufacturing	32629	114	155	156	149	123	143	1.0	1,018	-11.6	1,750

Table 8-1 – continued

Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	2004	% Change from 2002	2003
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	61	74	71	62	66	68	-2.6	420	5.4	722
Glass and glass product manufacturing	3272	155	197	187	182	177	192	-0.6	1,202	0.0	2,084
Cement manufacturing	32731	165	174	154	117	167	158	7.7	841	1.2	1,479
Ready-mix concrete manufacturing	32732	288	316	269	230	311	295	8.7	1,541	5.1	2,761
Other concrete product manufacturing	32739	119	123	109	88	114	107	12.2	628	9.6	1,143
Abrasive product manufacturing	32791	26	33	26	28	24	24	-3.4	185	-13.5	294
All other non-metallic mineral product manufacturing	32799	146	158	152	160	135	129	9.4	1,013	12.3	1,683
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,018	1,128	991	995	754	783	17.5	6,889	-1.3	9,877
Iron and steel pipes and tubes manufacturing from purchased steel	33121	281	309	264	239	218	223	22.1	2,007	6.2	2,908
Foundries	3315	206	288	265	268	223	295	-2.8	1,829	1.4	3,223
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	48	54	57	60	46	47	12.8	387	4.4	583
Plate work and fabricated structural product manufacturing	33231	494	527	456	426	446	405	14.4	3,037	4.6	4,928
Power boiler and heat exchanger manufacturing	33241	77	102	139	115	130	166	0.0	740	31.9	1,275
Spring and wire product manufacturing	3326	107	135	135	129	116	136	-8.1	882	-12.0	1,575
Coating, engraving, heat treating and allied activities	3328	248	317	289	285	207	246	8.3	1,936	-0.6	3,043
Other fabricated metal product manufacturing	3329	308	337	323	309	281	300	1.9	2,110	-6.5	3,486
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	155	185	181	209	142	157	5.9	1,294	-12.0	1,956
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	191	220	193	217	193	198	4.9	1,409	-7.2	2,465
All other general-purpose machinery manufacturing	33399	221	251	203	183	183	168	7.7	1,410	-1.9	2,336
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	137	246	241	161	208	269	-12.5	1,457	-22.7	3,046
Communications equipment manufacturing	3342	538	752	557	543	410	638	21.8	4,102	-20.2	6,180
Audio and video equipment manufacturing	3343	12	18	12	15	15	16	-9.4	108	-12.2	211
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	80	85	92	84	80	81	2.8	566	-9.3	968
Small electrical appliance manufacturing	33521	17	20	21	21	19	20	6.8	153	-1.7	263
Major appliance manufacturing	33522	124	183	180	171	134	159	4.6	1,111	-3.4	1,754
Battery manufacturing	33591	21	21	21	21	18	18	12.4	139	19.0	217
Communication and energy wire and cable manufacturing	33592	193	209	185	204	174	192	11.8	1,367	-14.5	2,170
All other electrical equipment and component manufacturing	33599	42	39	40	40	34	34	13.8	276	-0.1	429
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	3,708	7,314	6,621	6,579	3,818	6,329	-0.1	42,120	-6.4	69,258
Motor vehicle parts manufacturing	3363	1,925	2,904	2,933	3,013	1,906	2,674	5.4	19,199	-0.1	31,433
Aerospace product and parts manufacturing	3364	938	1,146	978	1,216	879	935	10.6	7,492	1.5	11,586
Railroad rolling stock manufacturing	3365	177	187	202	194	112	231	-10.5	1,305	-7.7	2,370
Ship and boat building	3366	101	121	120	120	82	93	10.2	764	-5.4	1,100
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	611	677	664	668	586	647	3.5	4,593	-1.3	7,751
Office furniture (including fixtures) manufacturing	3372	406	451	422	420	407	437	-0.7	2,964	5.3	5,107
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	198	218	200	216	178	201	19.7	1,527	10.7	2,287
Other miscellaneous manufacturing	3399	416	488	495	437	431	431	0.8	2,970	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		
	July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	Average 2004	% Change from 2002	2003	
\$ millions											
311 Food manufacturing											
Animal food manufacturing	3111	325	317	290	304	294	280	7.4	300	4.2	281
Starch and vegetable fat and oil manufacturing	31122	156	198	188	228	160	158	18.5	216	4.6	180
Sugar and confectionery product manufacturing	3113	342	332	314	296	328	327	0.9	309	5.0	310
Fruit and vegetable preserving and specialty food manufacturing	3114	825	852	853	860	778	779	5.6	857	5.3	853
Dairy product manufacturing	3115	848	873	878	890	802	818	6.0	872	-3.6	813
Meat product manufacturing	3116	863	855	840	824	779	765	1.3	815	-5.5	797
Cookie, cracker and pasta manufacturing	31182	119	123	121	121	124	133	-6.8	122	7.1	128
Other food manufacturing	3119	489	487	483	473	456	445	10.0	481	2.9	455
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	270	267	270	270	276	273	-1.5	253	7.8	250
Breweries	31212	203	209	206	201	190	194	6.0	197	0.8	185
Wineries	31213	266	260	257	254	251	253	2.5	256	4.8	251
Distilleries	31214	487	506	494	494	538	543	-11.6	488	3.3	528
Tobacco manufacturing	3122	405	450	451	462	408	413	6.6	467	-1.1	434
313 Textile mills											
Fibre, yarn and thread mills	3131	63	67	64	63	76	70	-8.1	63	0.3	69
Fabric mills	3132	341	338	335	335	387	386	-13.9	336	-12.3	378
Textile and fabric finishing and fabric coating	3133	78	79	77	76	74	71	2.8	76	11.7	73
314 Textile product mills											
Carpet and rug mills	31411	88	92	90	87	102	103	-15.4	89	2.2	101
Textile bag and canvas mills	31491	43	41	40	39	41	42	-10.9	39	-32.1	42
315 Clothing manufacturing											
Hosiery and sock mills	31511	117	116	118	121	151	155	-10.8	126	6.8	142
Other clothing knitting mills	31519	178	175	173	164	186	191	-4.0	163	6.1	164
Men's and boys' cut and sew clothing manufacturing	31522	411	408	412	411	524	539	-18.5	425	6.1	507
Women's and girls' cut and sew clothing manufacturing	31523	395	383	395	410	432	429	-4.1	398	1.0	416
Clothing accessories and other clothing manufacturing	3159	61	60	60	60	65	66	1.0	61	8.0	62
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	111	107	90	80	122	115	-10.9	86	-7.3	92
321 Wood product manufacturing											
Sawmills and wood preservation	3211	2,353	2,443	2,576	2,831	2,565	2,620	-10.3	2,743	-5.3	2,769
Veneer, plywood and engineered wood product manufacturing	3212	779	785	799	832	718	746	0.8	819	5.4	761
Other wood product manufacturing	3219	1,007	1,011	1,032	1,015	985	1,011	-1.2	1,014	8.0	1,003
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	2,539	2,517	2,508	2,512	2,515	2,533	-1.7	2,496	-3.1	2,508
Paperboard container manufacturing	32221	496	496	489	481	492	497	-1.1	481	2.8	479
Paper bag and coated and treated paper manufacturing	32222	362	358	368	369	397	396	-7.0	370	4.9	391
Other converted paper product manufacturing	32229	150	151	146	144	148	156	-4.5	143	0.9	146
323 Printing and related support activities											
Printing	32311	836	803	807	828	862	841	-1.4	821	-0.5	832
Support activities for printing	32312	33	33	32	33	33	30	-17.5	33	-32.0	37
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	1,992	1,935	1,952	1,949	1,862	1,749	8.1	1,883	1.4	1,703
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	246	259	256	265	248	250	6.7	255	8.7	243
Other basic organic chemical manufacturing	32519	320	328	336	341	356	344	-5.7	331	8.8	346
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	633	628	637	595	568	573	6.0	610	3.2	566
Pesticide and other agricultural chemical manufacturing	32532	75	70	69	102	83	78	8.4	89	29.1	84
Pharmaceutical and medicine manufacturing	3254	2,801	2,765	2,808	2,837	2,408	2,552	13.1	2,813	14.4	2,543
Paint and coating manufacturing	32551	258	262	262	278	274	283	-1.5	270	2.8	268
Adhesive manufacturing	32552	110	113	104	106	97	101	12.8	106	12.8	95
Soap and cleaning compound manufacturing	32561	93	92	96	97	109	107	-13.2	96	-29.0	106
Toilet preparation manufacturing	32562	183	197	201	189	203	195	-3.1	191	8.6	194
Printing ink manufacturing	32591	89	85	84	83	78	73	16.6	85	12.0	74
All other chemical product manufacturing	32599	423	413	396	392	395	414	-4.4	394	1.3	399
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	347	359	355	374	347	358	-3.5	350	-8.5	340
Polystyrene foam product manufacturing	32614	65	67	65	60	49	53	10.5	61	16.6	54
Other plastic product manufacturing	32619	966	956	980	944	916	938	1.4	959	7.4	938
Other rubber product manufacturing	32629	137	130	135	140	138	139	-5.3	135	-12.9	138

Table 8-2 – continued

Inventory owned for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	Average 2004	% Change from 2002	2003
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	72	71	75	77	75	72	-8.8	73	-8.1	76
Glass and glass product manufacturing	3272	245	248	248	254	257	252	-1.9	250	-2.1	252
Cement manufacturing	32731	181	189	195	201	181	192	-1.6	196	-6.8	182
Ready-mix concrete manufacturing	32732	90	82	83	82	90	89	-4.2	84	-7.7	87
Other concrete product manufacturing	32739	130	133	142	142	124	120	17.9	136	11.8	117
Abrasive product manufacturing	32791	50	48	50	49	61	64	-26.3	49	-19.4	61
All other non-metallic mineral product manufacturing	32799	129	123	125	125	132	131	-3.7	127	8.2	131
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,873	1,742	1,713	1,586	1,947	1,943	-13.6	1,729	-1.8	1,950
Iron and steel pipes and tubes manufacturing from purchased steel	33121	524	507	507	468	496	504	-3.4	491	2.3	495
Foundries	3315	303	296	310	299	294	307	-3.4	292	1.6	291
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	82	81	85	84	76	81	-1.0	83	2.2	83
Plate work and fabricated structural product manufacturing	33231	871	814	771	759	712	719	7.9	748	-1.7	677
Power boiler and heat exchanger manufacturing	33241	87	90	87	90	92	93	-12.1	89	4.1	96
Spring and wire product manufacturing	3326	178	178	165	154	169	180	-17.2	159	-11.6	172
Coating, engraving, heat treating and allied activities	3328	176	168	176	171	160	156	-1.3	171	-1.9	169
Other fabricated metal product manufacturing	3329	629	623	596	608	597	573	5.3	610	6.5	579
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	407	402	443	426	437	462	-13.3	426	1.2	474
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	348	341	320	320	346	349	-2.4	321	-7.2	324
All other general-purpose machinery manufacturing	33399	545	533	584	560	535	505	11.3	552	15.1	530
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	545	526	561	574	660	670	-17.7	558	1.2	669
Communications equipment manufacturing	3342	2,057	2,064	2,152	2,087	2,335	2,295	-12.7	2,144	-12.2	2,387
Audio and video equipment manufacturing	3343	43	44	55	54	55	59	-14.2	52	5.0	59
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	131	129	144	131	138	134	-6.3	135	-9.1	141
Small electrical appliance manufacturing	33521	41	41	40	41	39	38	4.3	40	9.3	40
Major appliance manufacturing	33522	187	186	206	204	175	189	1.0	193	11.9	186
Battery manufacturing	33591	52	51	46	45	38	37	31.7	46	-10.8	37
Communication and energy wire and cable manufacturing	33592	857	843	849	782	817	810	-2.9	808	-0.1	808
All other electrical equipment and component manufacturing	33599	102	104	103	105	105	104	-2.3	102	-2.0	103
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	1,442	1,441	1,574	1,647	1,205	1,246	12.3	1,472	-8.6	1,288
Motor vehicle parts manufacturing	3363	1,922	1,900	1,939	1,905	1,850	1,833	2.0	1,896	13.1	1,847
Aerospace product and parts manufacturing	3364	4,244	4,587	4,701	4,293	4,508	4,827	-13.6	4,342	-30.5	4,875
Railroad rolling stock manufacturing	3365	831	800	793	741	878	920	-18.4	757	-7.5	876
Ship and boat building	3366	100	100	107	110	112	110	-13.4	112	-1.8	129
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	753	767	760	762	773	800	-6.2	764	1.3	790
Office furniture (including fixtures) manufacturing	3372	332	333	323	332	351	319	-0.4	328	8.9	335
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	241	233	242	238	256	250	9.0	265	13.0	255
Other miscellaneous manufacturing	3399	954	964	975	1,029	961	968	-0.9	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							
July 2003	25,574	13,406	20,505	59,485	25,873	13,602	20,654	60,129
August 2003	25,520	13,515	20,386	59,420	25,705	13,443	20,393	59,541
September 2003	25,155	13,396	20,250	58,801	25,527	13,401	20,379	59,307
October 2003	25,050	13,298	19,852	58,200	25,208	13,313	20,227	58,748
November 2003	24,917	13,593	20,136	58,646	25,053	13,459	20,196	58,708
December 2003	24,883	12,896	19,415	57,195	24,981	13,184	20,137	58,301
January 2004	25,505	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	25,987	13,785	20,971	60,744	26,140	13,466	20,514	60,120
June 2004	25,965	13,539	20,759	60,263	26,401	13,457	20,610	60,468
July 2004	26,624	13,357	20,327	60,307	26,827	13,505	20,485	60,816

Table 10

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	2004	% Change from 2002	2003
\$ millions										
Total										
Newfoundland and Labrador	347	349	271	207	346	337	8.9	1,722	12.5	2,827
Prince Edward Island	117	145	154	104	125	150	7.4	820	2.2	1,356
Nova Scotia	779	801	804	745	716	710	5.9	5,184	2.7	8,524
New Brunswick	1,292	1,371	1,351	1,116	1,070	1,174	9.0	8,072	2.7	12,864
Quebec	11,009	12,145	11,763	11,390	10,139	10,707	6.9	78,613	-1.3	128,514
Ontario	21,986	28,390	26,995	26,401	20,823	24,758	4.2	177,278	-1.7	289,216
Manitoba	963	1,117	1,096	1,017	896	946	9.0	7,145	1.3	11,413
Saskatchewan	788	836	843	797	613	682	19.5	5,549	3.7	7,913
Alberta	4,468	4,597	4,380	4,177	3,712	3,744	12.0	29,597	5.0	45,838
British Columbia	3,751	3,826	3,714	3,496	3,258	3,173	12.1	24,244	-3.3	37,223
311 Food manufacturing										
Newfoundland and Labrador	174	171	112	52	166	156	8.8	668	-9.3	1,056
Prince Edward Island	72	84	95	68	85	98	1.7	515	-1.0	902
Nova Scotia	178	170	161	162	173	157	2.3	1,125	-0.7	1,999
New Brunswick	212	293	218	124	179	287	12.6	1,220	0.6	2,035
Quebec	1,381	1,422	1,457	1,307	1,248	1,324	8.9	9,351	5.2	15,170
Ontario	2,276	2,291	2,279	2,164	2,059	2,059	7.2	15,197	1.9	25,005
Manitoba	248	236	238	225	199	201	15.1	1,595	1.0	2,457
Saskatchewan	181	182	174	185	158	157	12.1	1,249	4.0	1,947
Alberta	817	807	800	749	609	557	16.1	5,355	-3.5	7,976
British Columbia	431	452	433	390	454	444	-0.1	2,817	3.5	4,890
312 Beverage and tobacco product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	328	354	320	287	382	396	-5.6	2,109	9.4	3,965
Ontario	515	539	520	446	514	480	3.6	3,135	0.6	5,316
Saskatchewan	4	4	3	3	4	3	9.0	20	-48.8	33
British Columbia	113	112	99	97	111	105	3.6	649	0.4	1,091
313 Textile mills										
Quebec	141	178	175	163	128	183	-6.4	1,124	-13.6	2,046
Ontario	76	92	89	88	76	85	1.7	613	-10.0	1,028
314 Textile product mills										
Quebec	65	73	75	71	72	80	-9.2	484	-11.0	912
Ontario	78	94	91	91	84	95	-6.8	597	-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	291	300	315	351	339	305	-7.2	2,278	-7.0	4,247
Ontario	137	141	148	153	150	141	-6.2	1,011	-6.1	1,923
Manitoba	24	21	21	21	21	17	12.9	150	-5.0	264
Saskatchewan	2	2	2	2	2	2	-4.8	14	7.6	28
Alberta	6	8	9	13	13	11	-11.6	69	-1.2	139
British Columbia	x	x	x	x	x	x	x	x	0.0	x
316 Leather and allied product manufacturing										
Quebec	26	24	22	22	25	24	-4.4	164	-9.4	390
Ontario	9	7	10	11	19	15	-31.7	82	-15.5	239
321 Wood product manufacturing										
Nova Scotia	61	72	59	46	52	48	16.4	364	-1.8	544
Quebec	780	956	968	914	636	752	14.7	5,802	-0.9	8,848
Ontario	574	636	622	579	556	535	8.1	3,795	-2.0	6,058
Manitoba	75	73	72	71	64	59	27.7	478	4.5	697
Saskatchewan	48	55	68	60	40	35	60.2	370	14.6	468
Alberta	331	350	357	347	263	236	45.1	2,228	11.3	2,932
British Columbia	1,199	1,216	1,160	1,077	868	835	27.8	7,444	-12.0	9,913
322 Paper manufacturing										
Nova Scotia	88	70	85	77	77	74	4.8	541	1.3	875
Quebec	897	876	883	857	891	864	-4.7	6,029	-8.4	10,620
Ontario	880	925	872	861	883	887	-5.5	6,099	-1.9	10,825
Alberta	153	156	152	147	141	143	-1.9	1,036	1.4	1,788
British Columbia	496	517	552	471	470	460	4.2	3,464	2.8	5,652

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	2004	% Change from 2002	2003
323 Printing and related support activities										
Quebec	219	230	237	233	221	207	0.9	1,602	-3.7	2,758
Ontario	483	545	542	547	491	530	-0.2	3,697	0.4	6,423
Manitoba	36	47	45	41	41	44	0.2	290	-1.2	510
Saskatchewan	12	13	12	10	13	11	1.4	82	5.4	147
Alberta	50	55	56	59	46	53	-0.7	376	-5.6	662
British Columbia	60	64	60	63	58	58	1.5	421	-8.5	758
324 Petroleum and coal products manufacturing										
Quebec	870	784	748	682	665	561	12.2	5,268	12.2	8,007
Ontario	1,280	1,273	1,211	1,079	954	880	17.0	8,030	6.8	11,670
Alberta	872	802	742	691	699	667	7.3	5,248	10.2	8,200
British Columbia	x	x	x	x	x	x	x	x	0.0	x
325 Chemical manufacturing										
Quebec	755	827	907	787	714	772	4.0	5,329	0.0	8,556
Ontario	1,928	2,083	1,951	1,972	1,714	1,843	6.2	13,527	3.1	21,357
Manitoba	70	80	82	62	56	71	5.1	504	28.2	814
Saskatchewan	50	109	159	129	26	103	22.7	715	16.5	799
Alberta	802	792	888	775	617	659	8.9	5,426	5.5	8,285
British Columbia	123	124	120	111	95	97	12.4	729	6.6	1,084
326 Plastics and rubber products manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	503	598	570	547	467	508	6.6	3,708	5.8	6,038
Ontario	1,138	1,402	1,343	1,332	1,121	1,279	1.4	8,860	-0.9	14,790
Manitoba	53	59	53	52	47	48	6.1	349	5.7	568
Saskatchewan	13	9	11	12	10	9	7.5	71	3.5	107
Alberta	77	83	75	72	77	77	5.9	500	0.9	836
British Columbia	103	102	95	98	112	113	-4.4	657	9.6	1,156
327 Non-metallic mineral product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	265	315	290	233	250	276	9.3	1,591	4.3	2,679
Ontario	514	568	522	474	536	524	3.7	3,157	5.6	5,560
Saskatchewan	9	9	7	5	10	9	-0.4	38	-7.7	71
Alberta	157	162	137	124	170	143	1.3	870	-0.7	1,556
British Columbia	138	146	130	133	132	127	9.3	881	11.6	1,416
331 Primary metal manufacturing										
Quebec	1,397	1,522	1,518	1,531	1,204	1,167	22.4	10,263	3.1	14,769
Ontario	1,481	1,747	1,675	1,682	1,194	1,266	11.5	11,215	-2.9	16,907
Alberta	177	157	147	138	133	133	8.1	1,131	41.3	1,812
332 Fabricated metal product manufacturing										
Newfoundland and Labrador	22	20	17	20	16	14	52.0	121	49.4	153
Prince Edward Island	1	2	2	2	2	1	-3.3	13	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	529	625	608	582	542	547	6.5	3,894	0.5	6,597
Ontario	1,476	1,739	1,628	1,586	1,370	1,467	6.2	10,756	-3.9	17,460
Manitoba	64	67	61	60	54	56	15.1	407	6.0	620
Saskatchewan	41	45	41	36	35	34	13.6	255	4.9	389
Alberta	332	352	314	285	295	316	13.4	2,149	22.7	3,410
British Columbia	173	180	175	168	150	150	13.4	1,121	0.4	1,721
333 Machinery manufacturing										
Quebec	392	485	436	382	352	398	4.6	2,856	-3.7	4,920
Ontario	1,173	1,306	1,195	1,186	1,168	1,156	0.3	8,150	-6.8	13,688
Manitoba	72	92	82	76	74	69	11.3	544	-9.0	802
Saskatchewan	49	50	51	69	44	42	6.4	396	-10.7	611
Alberta	296	356	292	353	261	276	21.8	2,233	13.0	3,308
British Columbia	206	178	169	156	146	151	14.1	1,190	9.1	1,837
334 Computer and electronic product manufacturing										
Quebec	435	588	477	425	398	547	7.1	3,495	-17.3	5,856
Ontario	790	929	913	802	694	807	13.8	6,019	-7.6	9,773
Saskatchewan	x	x	x	x	x	x	x	x	0.0	x
Alberta	93	188	106	128	94	151	12.8	912	-31.8	1,520
British Columbia	102	109	96	98	97	85	18.3	690	-10.0	1,101

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	July 2004	June 2004	May 2004	Apr. 2004	July 2003	June 2003	% Change from 2003	2004	% Change from 2002	2003
335 Electrical equipment, appliance and component manufacturing										
Quebec	262	340	309	305	268	301	6.1	2,057	-1.3	3,405
Ontario	426	512	480	487	412	486	4.4	3,323	-7.9	5,458
Manitoba	11	12	11	12	12	13	-12.4	84	-22.0	166
Saskatchewan	16	15	15	13	12	13	20.4	97	-31.9	145
Alberta	35	32	29	37	32	28	24.7	236	9.7	356
British Columbia	x	x	x	x	x	x	x	x	0.0	x
336 Transportation equipment manufacturing										
Nova Scotia	67	67	73	70	45	61	12.1	453	-10.6	707
Quebec	1,022	1,145	942	1,224	895	1,016	5.9	7,739	-7.1	12,570
Ontario	5,822	10,518	9,904	9,898	5,921	9,246	1.8	63,264	-3.3	103,510
Manitoba	115	167	176	151	114	144	-0.4	1,030	3.6	1,697
Saskatchewan	18	26	24	23	21	18	2.0	153	-11.5	240
Alberta	56	62	59	64	60	71	-5.8	440	9.0	780
British Columbia	85	100	101	97	82	88	7.5	651	-36.7	991
337 Furniture and related product manufacturing										
Quebec	283	336	327	335	286	319	-1.0	2,247	-5.6	3,940
Ontario	638	678	645	637	615	660	3.3	4,554	6.2	7,627
Manitoba	44	47	46	45	46	46	-1.6	311	-1.0	544
Saskatchewan	6	6	6	6	7	6	-0.8	40	8.7	68
Alberta	65	74	70	73	65	73	-2.5	486	-10.5	851
British Columbia	75	76	71	75	68	66	5.5	488	5.6	799
339 Miscellaneous manufacturing										
Newfoundland and Labrador	x	x	x	x	x	x	x	x	0.0	x
Quebec	167	165	180	152	159	160	10.5	1,223	-1.1	2,221
Ontario	293	364	356	326	291	318	1.3	2,197	2.6	3,560
Manitoba	12	20	17	16	17	12	16.3	112	-2.1	175
Saskatchewan	4	6	5	5	5	5	4.7	32	13.6	55
Alberta	50	67	57	46	47	63	12.0	339	44.3	534
British Columbia	62	57	55	75	63	51	17.5	410	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 strata need to be sampled with certainty. A random sample is drawn from the remaining strata. The responses from these sampled establishments are weighted according to the inverse of their probability of selection.

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

Data collection

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

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

Data quality

Statistical edit and imputation

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

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

Revisions

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

Estimation

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

Benchmarking

The 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
	%				
July 2003	0.62	0.97	0.85	1.42	2.23
August 2003	0.53	0.98	0.85	1.36	2.24
September 2003	0.57	0.99	0.91	1.42	2.07
October 2003	0.57	1.01	1.00	1.39	2.08
November 2003	0.59	1.03	0.98	1.31	2.04
December 2003	0.58	1.06	1.06	1.35	2.00
January 2004	0.57	1.08	1.04	1.36	1.89
February 2004	0.55	1.10	1.00	1.37	1.91
March 2004	0.59	1.10	0.98	1.37	2.12
April 2004	0.61	1.15	0.97	1.31	2.27
May 2004	0.61	1.13	0.94	1.28	2.31
June 2004	0.58	1.13	0.96	1.29	2.39
July 2004	0.60	1.19	0.97	1.25	2.40

2. Non-sampling Error Measures

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

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

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

The text table 2 contains the three types of weighted rates for each of the characteristics at the national level for all of manufacturing. In the table, the rates (expressed as percentages) are averages over the last thirteen months.

Text Table 2

Average national weighted rates by characteristic

Characteristic	Response	Imputation	Editing
	%		
Shipments	90.04	6.57	3.39
Raw materials	79.97	16.48	3.55
Goods in process	63.86	10.23	25.92
Finished products	79.37	13.26	7.37
Unfilled orders	74.52	8.18	17.29

Joint Interpretation of Measures of Error

The measure of non-response error as well as the coefficient of variation must be considered jointly to have an overview of the quality of the estimates. The lower the coefficient of variation and the higher the weighted response rate, the better will be the published estimate. Seasonal Adjustment Economic time series contain the elements essential to the description, explanation and forecasting of the behavior of an economic phenomenon. They are statistical records of the evolution of economic processes through time. In using time series to observe economic activity, economists and statisticians have identified four characteristic behavioral components: the long-term movement or trend, the cycle, the seasonal variations and the irregular fluctuations. These movements are caused by various economic, climatic or institutional factors. The seasonal variations occur periodically on a more or less regular basis over the course of a year. These variations occur as a result of seasonal changes in weather, statutory holidays and other events that occur at fairly regular intervals and thus have a significant impact on the rate of economic activity.

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

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

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

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

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

Trend

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