Catalogue no. 31-001-XIE

Monthly Survey of Manufacturing

June 2004

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Monthly Survey of Manufacturing

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Symbols

The following standard symbols are used in Statistics Canada publications:

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

Acknowledgments

This publication was prepared under the direction of:

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

Notice to users

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

In the following tables, some components may not add exactly to the total, because of rounding.

For a complete description of concepts, methodology and definitions, please consult our documentation on Statistics Canada's Website.

Schedule of releases

Schedule of releases	Monthly survey of manufacturing
Reference period	Release date
November 2003	January 21, 2004
December 2003	February 13, 2004
January 2004	March 16, 2004
February 2004	April 15, 2004
March 2004	May 14, 2004
April 2004	June 15, 2004
May 2004	July 15, 2004
June 2004	August 13, 2004
July 2004	September15, 2004
August 2004	October 15, 2004
September 2004	November 15, 2004
October 2004	December 15, 2004

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Highlights

Monthly Survey of Manufacturing

- Manufacturers cruised through June, posting record-high shipments of $49.9 billion, up 1.5% from May. A build-up of inventories, coupled with rising new orders rounded out the upbeat month.

Analysis – June 2004

Manufacturers cruised through June, posting record-high shipments of $49.9 billion, up 1.5% from May. A build-up of inventories, coupled with rising new orders rounded out the upbeat month.

Widespread increases

June's increase in shipments was widespread; 15 of 21 industries, accounting for a healthy 82% of total shipments, were up. June also marked the seventh consecutive advance in shipments, the longest string of gains since eight months were reported during 1998/99.

Although soaring prices for crude oil and various primary metals have contributed to strong shipment gains in recent months, June's increase went beyond the price effect. Big-ticket industries such as motor vehicles, aerospace and machinery, contributed to a 2.0% hike in durable goods manufacturing to $28.6 billion in June, the highest level since the boom period of 2000. Shipments of nondurable goods were also up by 0.8%, following May's price-inflated jump of 2.3%.

Manufacturers setting a strong pace in 2004

Manufacturing shipments have rebounded 6.1% in the first six months of 2004, compared with the same period in 2003. Despite the strong gains, Canadian manufacturers still have some room to catch up to their southern neighbours. Year-to-date shipments in the United States are up 10.6% compared with last year.

Meanwhile, manufacturing prospects should remain positive for the upcoming quarter, according to the Business Conditions Survey for July. Manufacturers indicated that both production and employment prospects in the third quarter were higher and satisfaction with the current levels of unfilled orders and orders received was positive.

There are uncertainties on the horizon, which may curb some of the manufacturers' short-term prospects. As the summer progresses, energy costs remain a key issue, while escalating global demand for steel products and other inputs has pushed these costs to recent highs.

Canada's largest manufacturing provinces report big gains

Ontario and Quebec led the six provinces reporting higher shipments in June. Shipments in Ontario increased for the fifth month in a row, up $388 million (+1.5%) to $26.2 billion. Wide-ranging gains were reported including primary metals, petroleum and fabricated metal products.

Quebec manufacturers recovered strongly in June, following May's first decrease in shipments (-1.6%) since November 2003. Aerospace and petroleum manufacturing contributed to a $332 million (+2.9%) rise in shipments to $11.7 billion, the sixth gain in the last seven months.

Shipments in Alberta also bounced back from a 3.5% drop in May, their first decrease in 11 months. June shipments rose by $137 million (+3.3%) to $4.3 billion as a result of the petroleum and chemical products industries. Year-to-date shipments in Alberta are 7.8% above the same period in 2003.

Factory payrolls show some improvement

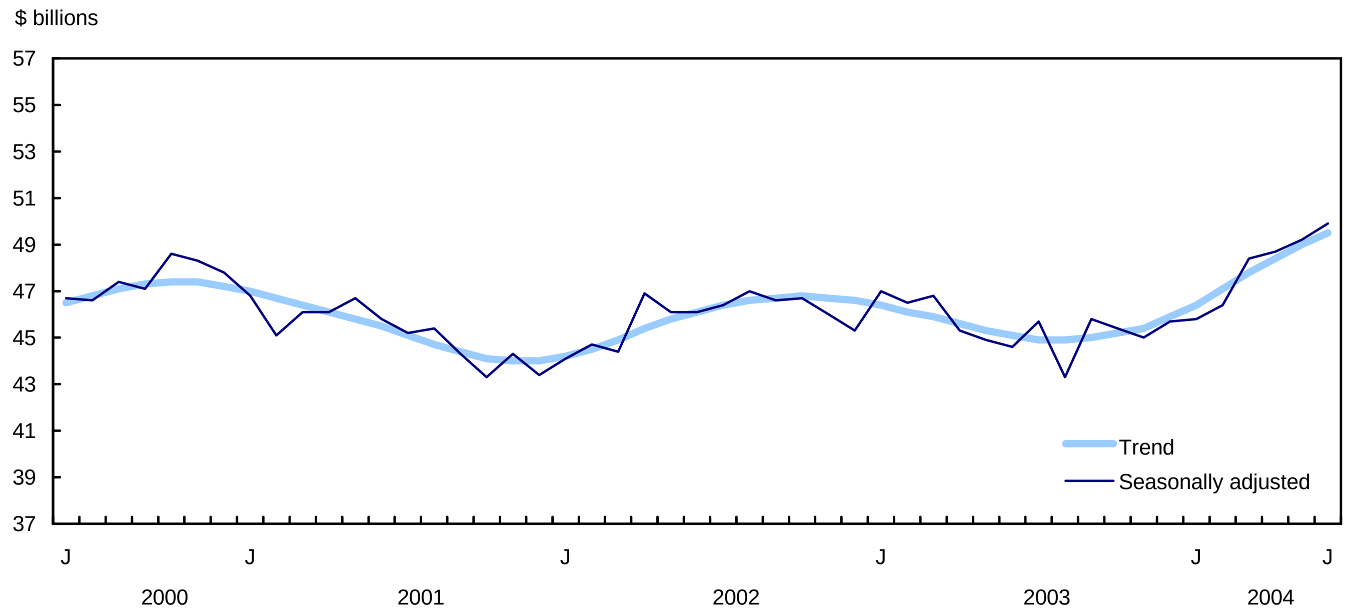
Following an extended period of little change in manufacturing employment that began during the fall of 2003, manufacturers boosted their employment levels by 21,000 jobs in July, the first significant rise in more than a year. Employment in June fell back by 12,000.

Durable goods manufacturing dominate in June

Manufacturers of motor vehicles reported a 2.7% jump in shipments to $6.2 billion. June's increase marked the fourth consecutive rise in shipments and the highest level in almost one year. During the first six months of 2004, shipments were on par with the same period in 2003 (+0.2%). Despite sky-high petroleum prices, demand for Canadian-manufactured models by US consumers has remained strong, enhanced by attractive financing options and some of the best-ever buying incentives.

Chart 1

Shipments are at record levels



In June, the aerospace products and parts industry reported production of $1.2 billion (+13.6%), regaining all that was lost in May (-11.8%). The industry has made huge strides in 2004, following a three-year slump in air travel and the recent restructuring of several airlines. Production levels from January to June are up 11.2% over the same period in 2003.

Also reporting higher shipments in June were the primary metals (+3.2%), machinery (+4.7%) and computer (+5.1%) industries.

Strong demand translates into higher inventories

Robust global demand has been fuelling the recent build-up in manufacturing inventories. Inventories rose 0.6% to $60.5 billion, the sixth increase in a row and the highest level of inventories since May 2003. The trend has been positive throughout 2004.

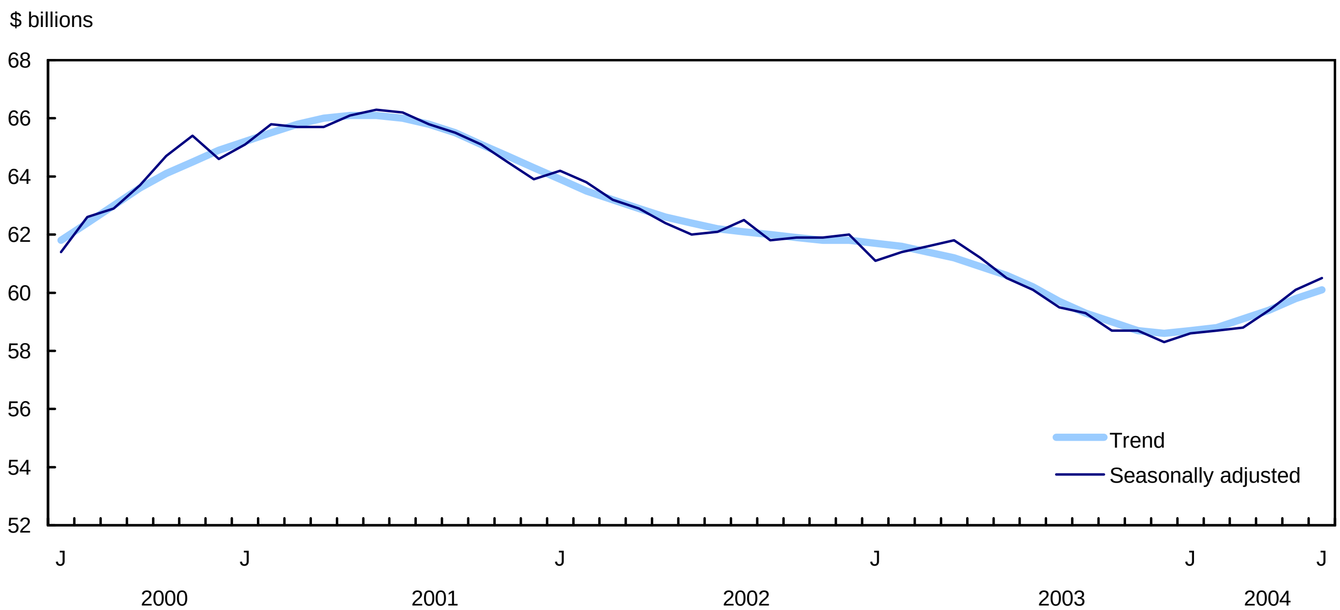
A continuing sense of confidence in the economy has contributed to a recent accumulation in raw materials inventories. Inventories of raw materials rose 1.2% to $26.5 billion, a positive sign of anticipated production.

Finished-products inventories also surged 0.5% in June, the third consecutive rise. Meanwhile, goods-in-process inventories edged down 0.5% to $13.4 billion, the first reduction since March.

The main contributors to the higher inventories include the primary metals (+2.6%), fabricated metal products (+2.9%) and chemical products (+1.4%) industries.

Chart 2

Raw materials boost total inventories



Record low for the inventory-to-shipment ratio

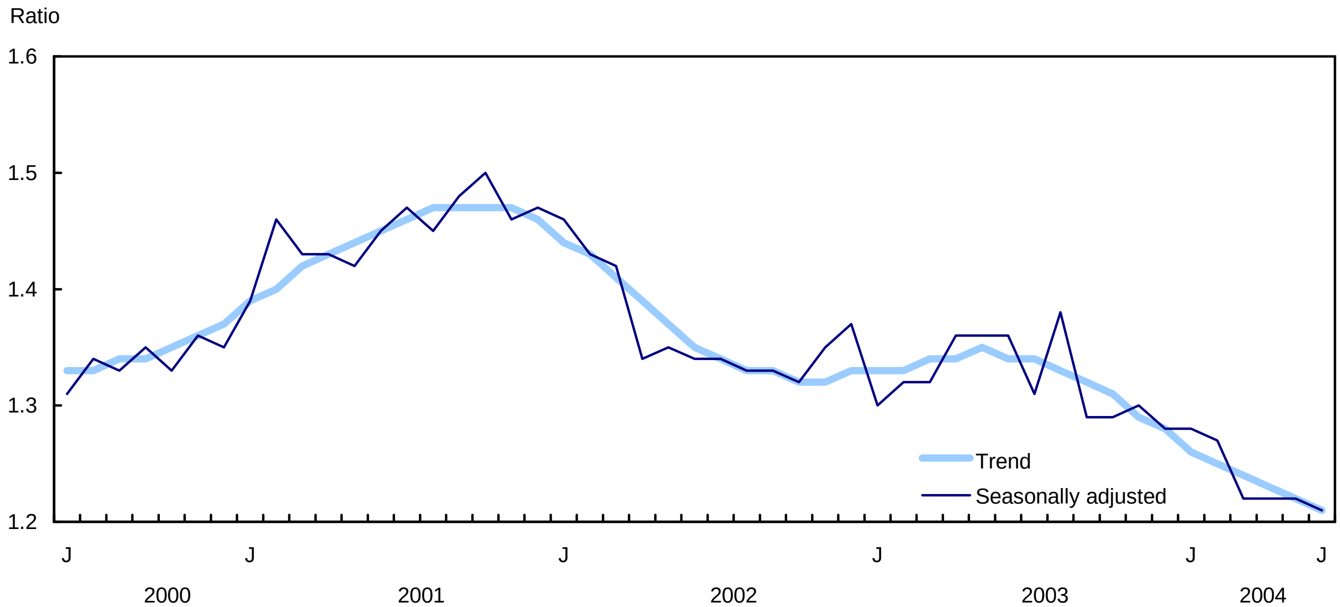
Although manufacturers' have been re-stocking their inventory since the start of the year, shipment activity has outpaced the rise in inventories, contributing to record-low levels for the inventory-to-shipment ratio. In June, the ratio edged back to 1.21, following three consecutive months at 1.22. This marked 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 a ratio of 1.23 in June.

The finished-products inventory-to-shipment ratio also slipped back to 0.41 in June, 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

Record low for the inventory-to-shipment ratio



Manufacturers secure more new orders

Following May's brief setback (-0.9%), manufacturers' new orders resumed their climb in June, rising a strong 1.7% to $50.0 billion. Orders are up an impressive 13% since November's recent low of $44.2 billion.

Computer and electronic products manufacturing led all industries with a surge in new orders of 14.6% in June. The beleaguered industry has been gradually turning around in recent months. The primary metals (+5.0%) and motor vehicles (+1.4%) industries also bolstered their order books in June.

Manufacturers add to their backlog of unfilled orders

Unfilled orders edged up 0.3% to $37.4 billion in June. Strong gains reported by the computer (+4.6%) and primary metals (+5.2%) industries were largely offset by a decrease in the backlog of orders for the aerospace industry (-3.3%). Excluding the aerospace products and parts industry, unfilled orders were up a robust 2.0%.

As the global economy has continued to improve, Canadian manufacturers have become beneficiaries. Unfilled orders are up almost 7.0% compared with levels at the end of 2003. In addition, the most recent Business Conditions Survey for July indicated that manufacturers' satisfaction with unfilled orders was at the highest in four years.

Chart 4

The trend continues to improve for unfilled orders

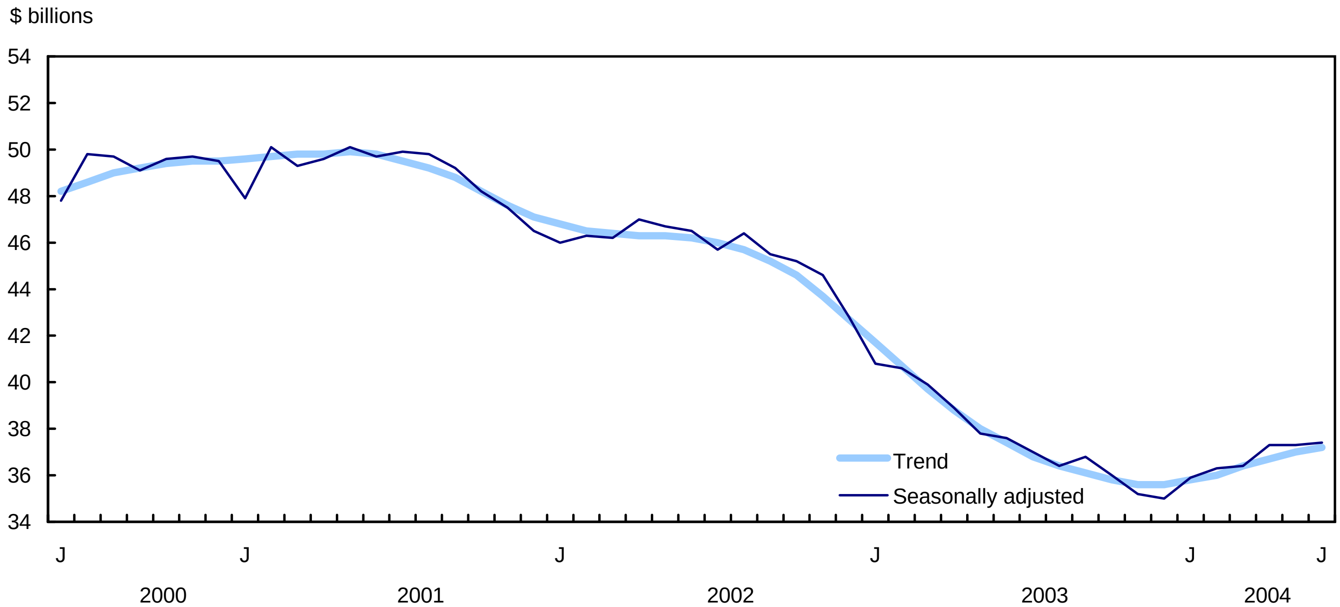


Chart 5

Inventories - Monthly change in trend

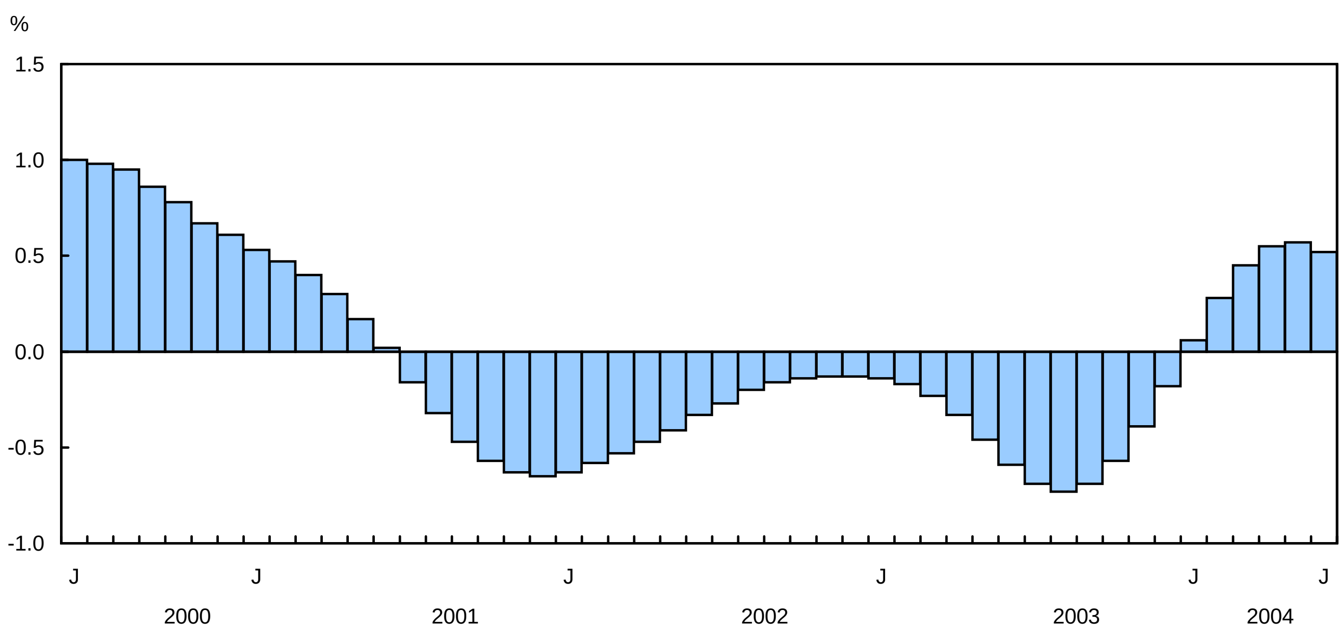


Chart 6

Shipments - Monthly change in trend

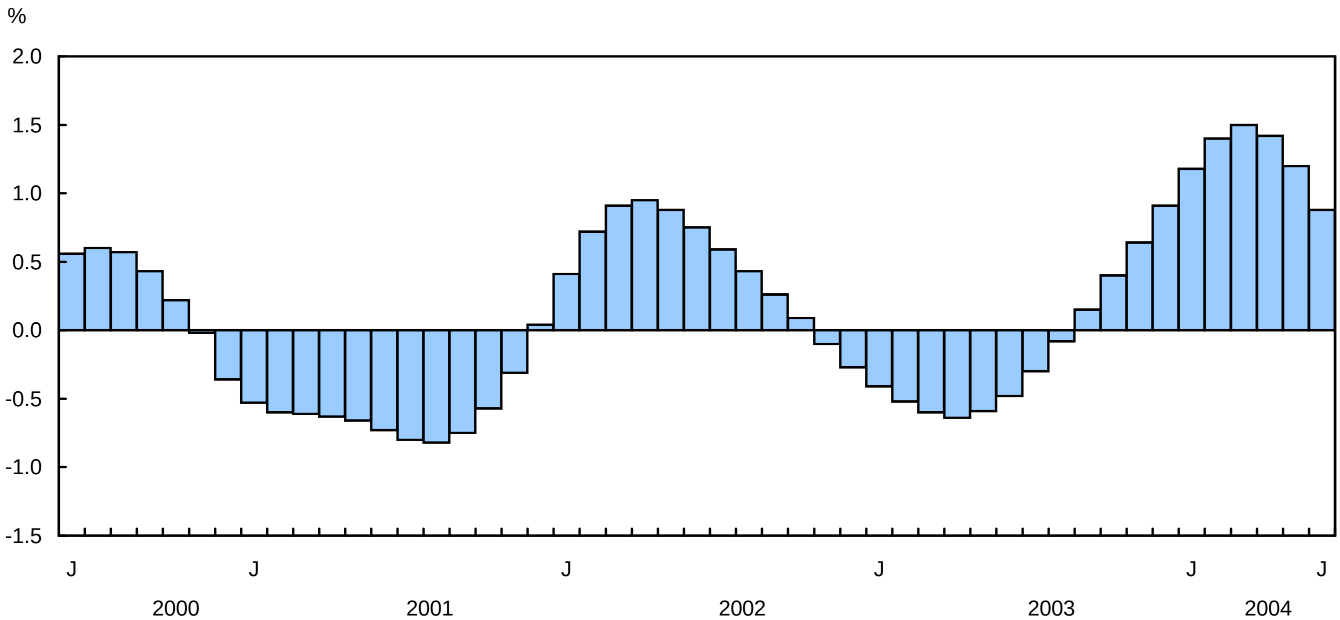
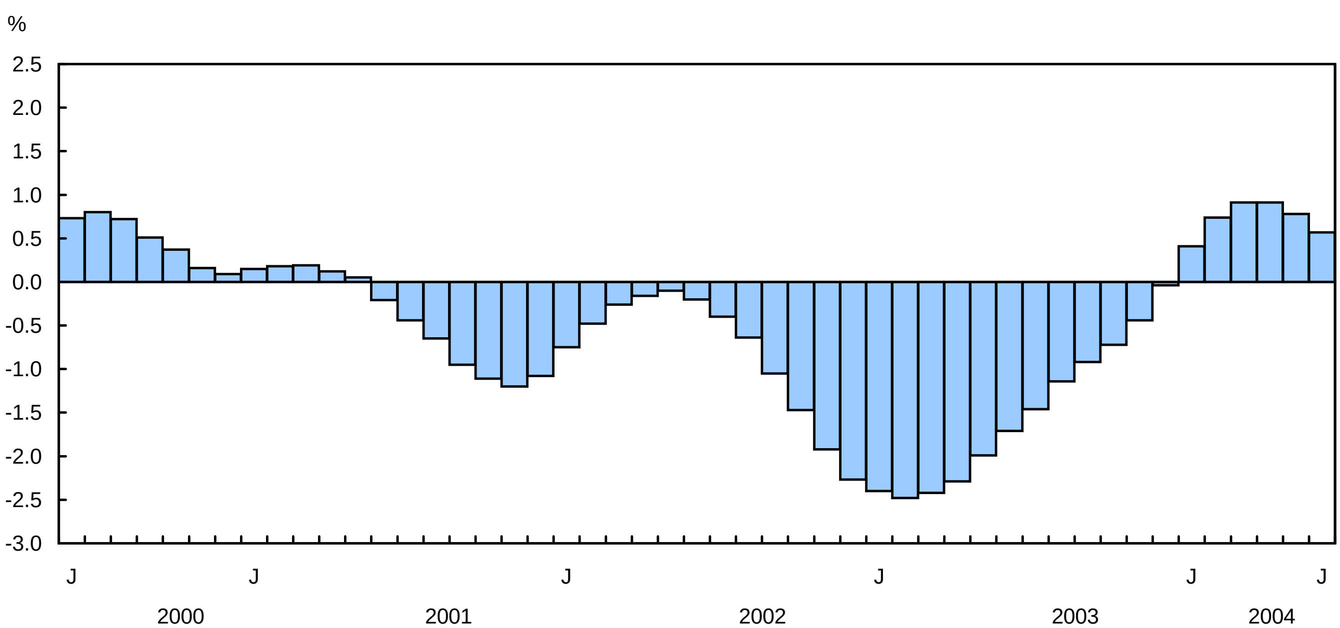


Chart 7

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

A note on CANSIM

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

Selected CANSIM tables from Statistics Canada

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

Selected surveys from Statistics Canada

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

Selected tables of Canadian statistics from Statistics Canada

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

Statistical Tables

Table 1-1

All manufacturing industries - Shipments, inventories and orders

Period	Unadjusted				Seasonally adjusted			
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders
	$ millions							
June 2003	46,387	60,282	37,581	45,943	44,569	60,481	37,576	44,335
July 2003	41,706	59,485	37,357	41,482	45,735	60,129	37,020	45,179
August 2003	43,610	59,420	36,817	43,069	43,290	59,541	36,433	42,702
September 2003	47,961	58,801	37,228	48,372	45,818	59,307	36,838	46,223
October 2003	48,508	58,200	36,005	47,286	45,373	58,748	35,984	44,519
November 2003	44,983	58,646	35,049	44,027	44,993	58,708	35,204	44,213
December 2003	42,991	57,195	34,653	42,595	45,678	58,301	35,020	45,493
January 2004	42,408	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	49,447	60,250	37,254	50,358	48,712	59,371	37,297	49,648
May 2004	51,346	60,750	37,576	51,668	49,181	60,149	37,306	49,190
June 2004	53,578	60,359	37,409	53,412	49,923	60,506	37,421	50,038

Table 1-2

All manufacturing industries - Month to month % change and trend

Period	Month to month % change				Inventory to shipments ratio		Month to month % change			
	Shipments		Inventories				Unfilled orders		New orders	
	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend
June 2003	-0.7	-0.5	-1.2	-0.6	1.36	1.34	-0.6	-1.7	1.2	-0.2
July 2003	2.6	-0.3	-0.6	-0.7	1.31	1.34	-1.5	-1.5	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	0.2	-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	0.6
November 2003	-0.8	0.6	-0.1	-0.4	1.30	1.29	-2.2	-0.4	-0.7	0.9
December 2003	1.5	0.9	-0.7	-0.2	1.28	1.28	-0.5	0.0	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	0.7	0.1	1.7
March 2004	4.3	1.5	0.3	0.5	1.22	1.24	0.0	0.9	3.4	1.6
April 2004	0.7	1.4	0.9	0.5	1.22	1.23	2.6	0.9	2.6	1.4
May 2004	1.0	1.2	1.3	0.6	1.22	1.22	0.0	0.8	-0.9	1.1
June 2004	1.5	0.9	0.6	0.5	1.21	1.21	0.3	0.6	1.7	0.7

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							
June 2003	9,004	3,079	1,548	8,998	8,306	3,143	1,592	8,311
July 2003	5,724	3,055	1,561	5,737	8,911	3,144	1,575	8,894
August 2003	7,339	3,005	1,617	7,395	7,307	3,033	1,614	7,346
September 2003	8,696	3,167	1,649	8,728	8,337	3,164	1,624	8,347
October 2003	9,022	3,082	1,710	9,083	8,286	3,110	1,680	8,342
November 2003	8,116	3,166	1,771	8,177	7,980	3,093	1,730	8,030
December 2003	7,139	3,001	1,797	7,165	8,233	3,067	1,765	8,267
January 2004	7,785	3,091	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	9,603	3,554	2,036	9,669	8,832	3,514	2,089	8,947
May 2004	9,566	3,515	2,070	9,600	8,902	3,454	2,111	8,924
June 2004	10,240	3,347	2,022	10,192	8,960	3,406	2,090	8,939

Table 2-2

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

Period	Month to month % change				Inventory to shipments ratio		Month to month % change			
	Shipments		Inventories				Unfilled orders		New orders	
	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend
June 2003	-2.2	-1.0	-1.5	-0.3	0.38	0.38	0.3	-0.8	-1.5	-0.9
July 2003	7.3	-0.9	0.1	-0.4	0.35	0.38	-1.1	0.0	7.0	-0.8
August 2003	-18.0	-0.7	-3.5	-0.4	0.42	0.38	2.5	0.7	-17.4	-0.6
September 2003	14.1	-0.5	4.3	-0.3	0.38	0.38	0.7	1.5	13.6	-0.3
October 2003	-0.6	-0.2	-1.7	0.0	0.38	0.38	3.5	2.1	-0.1	-0.1
November 2003	-3.7	0.1	-0.5	0.4	0.39	0.38	3.0	2.7	-3.7	0.2
December 2003	3.2	0.4	-0.8	0.8	0.37	0.38	2.0	3.2	3.0	0.6
January 2004	-0.1	0.9	-0.1	1.3	0.37	0.38	2.1	3.5	-0.1	1.0
February 2004	-1.1	1.4	4.9	1.7	0.40	0.39	3.2	3.5	-0.9	1.4
March 2004	7.1	1.6	4.7	2.0	0.39	0.39	6.2	3.2	7.7	1.5
April 2004	1.5	1.6	4.4	2.0	0.40	0.39	5.8	2.6	1.5	1.5
May 2004	0.8	1.3	-1.7	1.8	0.39	0.39	1.1	1.9	-0.3	1.2
June 2004	0.7	1.0	-1.4	1.5	0.38	0.39	-1.0	1.2	0.2	0.8

Table 3-1

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

Period	Unadjusted				Seasonally adjusted			
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders
	$ millions							
June 2003	37,383	57,203	36,034	36,945	36,263	57,338	35,984	36,024
July 2003	35,982	56,430	35,796	35,745	36,823	56,984	35,446	36,285
August 2003	36,271	56,416	35,199	35,674	35,982	56,508	34,819	35,356
September 2003	39,265	55,633	35,579	39,644	37,482	56,143	35,213	37,876
October 2003	39,487	55,118	34,295	38,203	37,087	55,638	34,303	36,177
November 2003	36,867	55,480	33,278	35,850	37,013	55,615	33,474	36,183
December 2003	35,852	54,194	32,856	35,430	37,445	55,234	33,255	37,226
January 2004	34,622	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	39,844	56,696	35,217	40,689	39,881	55,857	35,208	40,701
May 2004	41,779	57,236	35,506	42,068	40,279	56,696	35,195	40,266
June 2004	43,338	57,012	35,386	43,219	40,963	57,100	35,331	41,099

Table 3-2

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

Period	Month to month % change				Inventory to shipments ratio		Month to month % change			
	Shipments		Inventories				Unfilled orders		New orders	
	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend
June 2003	-0.3	-0.4	-1.2	-0.6	1.58	1.57	-0.7	-1.8	1.8	-0.1
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	1.2	0.5	0.0	1.48	1.46	2.6	0.2	3.3	1.6
February 2004	1.7	1.4	-0.1	0.2	1.45	1.44	1.0	0.6	0.3	1.7
March 2004	3.8	1.5	0.0	0.4	1.40	1.42	-0.3	0.8	2.5	1.6
April 2004	0.5	1.4	0.7	0.5	1.40	1.41	2.4	0.8	2.9	1.4
May 2004	1.0	1.2	1.5	0.5	1.41	1.40	0.0	0.7	-1.1	1.1
June 2004	1.7	0.9	0.7	0.5	1.39	1.40	0.4	0.5	2.1	0.7

Table 4-1

Shipments by major group and selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% change from 2003	2004	% change from 2002	2003
		$millions									
Food manufacturing	311	6,064	5,966	5,429	5,594	5,439	5,500	7.8	33,083	1.7	63,436
Beverage and tobacco product manufacturing	312	1,181	1,108	956	994	1,142	1,079	1.9	5,758	3.2	12,032
Textile mills	313	300	298	282	300	297	309	-4.7	1,694	-11.0	3,421
Textile product mills	314	196	197	193	190	205	217	-6.2	1,114	-10.3	2,297
Clothing manufacturing	315	495	525	575	597	511	560	-5.6	3,256	-6.3	7,075
Leather and allied product manufacturing	316	41	41	42	49	47	54	-14.9	266	-13.7	743
Wood product manufacturing	321	3,504	3,498	3,259	3,204	2,655	2,666	20.8	18,341	-3.4	31,248
Paper manufacturing	322	2,867	2,851	2,717	2,914	2,710	2,839	-2.8	16,460	-3.6	33,204
Printing and related support activities	323	982	978	979	1,074	930	980	0.1	5,761	-0.7	11,590
Petroleum and coal products manufacturing	324	3,794	3,679	3,314	3,490	2,855	2,896	8.2	20,656	9.0	37,355
Chemical manufacturing	325	3,950	4,078	3,833	3,971	3,593	3,894	4.5	22,458	3.6	41,187
Plastics and rubber products manufacturing	326	2,386	2,273	2,230	2,309	2,140	2,222	3.1	12,938	1.0	24,722
Non-metallic mineral product manufacturing	327	1,268	1,144	1,014	913	1,151	1,106	5.9	5,726	5.3	11,994
Primary metal manufacturing	331	3,935	3,767	3,742	4,087	2,925	3,108	16.7	22,112	2.3	37,606
Fabricated metal product manufacturing	332	3,067	2,900	2,790	2,938	2,644	2,633	8.0	16,364	0.4	31,026
Machinery manufacturing	333	2,523	2,247	2,254	2,390	2,126	2,194	5.0	13,386	-2.9	25,576
Computer and electronic product manufacturing	334	1,905	1,647	1,503	2,088	1,635	1,430	12.5	10,052	-13.1	18,790
Electrical equipment, appliance and component manufacturing	335	967	890	888	966	877	850	5.9	5,286	-5.7	9,984
Transportation equipment manufacturing	336	12,165	11,345	11,585	12,111	10,683	11,220	2.7	66,902	-3.9	120,949
Motor vehicle manufacturing	3361	7,315	6,621	6,579	7,031	6,329	6,662	0.2	38,413	-6.4	69,258
Motor vehicle body and trailer manufacturing	3362	353	360	333	331	319	357	-0.8	1,943	0.1	3,695
Motor vehicle parts manufacturing	3363	2,925	2,945	3,024	3,178	2,674	2,726	6.2	17,319	-0.1	31,433
Aerospace product and parts manufacturing	3364	1,151	979	1,213	1,102	935	1,042	11.2	6,556	1.5	11,586
Railroad rolling stock manufacturing	3365	186	202	194	189	231	212	-16.3	1,127	-7.7	2,370
Ship and boat building	3366	115	119	117	111	93	141	6.9	653	-5.4	1,100
Furniture and related product manufacturing	337	1,247	1,191	1,187	1,272	1,189	1,191	1.9	7,134	1.2	14,035
Miscellaneous manufacturing	339	741	722	677	729	632	617	9.9	3,970	3.5	7,495
Non-durable goods industries [1]		**22,256**	**21,994**	**20,548**	**21,481**	**19,870**	**20,549**	**3.9**	**123,444**	**1.5**	**237,062**
Durable goods industries [2]		**31,322**	**29,351**	**28,900**	**30,699**	**26,517**	**27,015**	**7.7**	**169,273**	**-2.6**	**308,703**
Manufacturing		**53,578**	**51,346**	**49,447**	**52,181**	**46,387**	**47,564**	**6.1**	**292,717**	**-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 May	Current periods				Change from previous month			Trend change from previous month			
			June 2004	May 2004	Apr. 2004	Mar. 2004	June 2004	May 2004	Apr. 2004	June 2004	May 2004	Apr. 2004	Mar. 2004
			$ millions				percentage						
Food manufacturing	311	34	5,731	5,697	5,650	5,655	0.6	0.8	-0.1	0.4	0.6	0.7	0.8
Beverage and tobacco product manufacturing	312	-6	1,022	1,029	993	1,027	-0.6	3.6	-3.3	0.3	0.3	0.2	0.1
Textile mills	313	1	278	277	274	277	0.2	1.2	-1.3	0.1	0.1	0.0	0.0
Textile product mills	314	-3	181	184	185	183	-1.7	-0.4	1.2	-0.2	-0.1	0.0	0.0
Clothing manufacturing	315	-4	557	561	568	552	-0.8	-1.2	2.8	-0.2	-0.4	-0.5	-0.7
Leather and allied product manufacturing	316	1	49	48	53	54	2.0	-8.9	-1.4	-2.3	-3.1	-3.6	-3.4
Wood product manufacturing	321	-33	3,159	3,191	3,121	2,997	-1.0	2.3	4.1	1.0	1.9	2.6	2.8
Paper manufacturing	322	-23	2,836	2,859	2,726	2,779	-0.8	4.9	-1.9	0.8	1.1	1.3	1.4
Printing and related support activities	323	-14	978	992	965	962	-1.5	2.8	0.3	0.3	0.4	0.4	0.4
Petroleum and coal products manufacturing	324	83	3,820	3,737	3,483	3,425	2.2	7.3	1.7	2.5	3.3	3.8	3.8
Chemical manufacturing	325	49	3,695	3,646	3,647	3,640	1.3	0.0	0.2	0.7	0.9	1.1	1.2
Plastics and rubber products manufacturing	326	58	2,160	2,103	2,110	2,152	2.7	-0.3	-2.0	0.5	0.6	0.6	0.6
Non-metallic mineral product manufacturing	327	22	1,060	1,038	1,059	1,057	2.1	-2.0	0.2	0.3	0.6	0.9	1.1
Primary metal manufacturing	331	117	3,792	3,675	3,676	3,650	3.2	0.0	0.7	1.1	1.8	2.3	2.6
Fabricated metal product manufacturing	332	60	2,877	2,817	2,802	2,788	2.1	0.5	0.5	0.8	1.0	1.2	1.4
Machinery manufacturing	333	106	2,349	2,243	2,233	2,155	4.7	0.5	3.6	1.3	1.5	1.4	1.2
Computer and electronic product manufacturing	334	85	1,759	1,674	1,700	1,784	5.1	-1.5	-4.7	0.4	0.6	0.9	1.2
Electrical equipment, appliance and component manufacturing	335	16	894	878	874	864	1.9	0.4	1.2	0.6	0.7	0.7	0.8
Transportation equipment manufacturing	336	185	10,826	10,641	10,708	10,498	1.7	-0.6	2.0	0.9	1.2	1.4	1.5
Motor vehicle manufacturing	3361	163	6,248	6,085	6,008	5,922	2.7	1.3	1.5	1.5	1.9	2.1	2.0
Motor vehicle body and trailer manufacturing	3362	3	321	318	306	296	0.9	3.9	3.3	1.0	1.1	1.0	0.8
Motor vehicle parts manufacturing	3363	-104	2,713	2,817	2,823	2,779	-3.7	-0.2	1.6	-0.1	0.2	0.5	0.8
Aerospace product and parts manufacturing	3364	138	1,154	1,016	1,151	1,076	13.6	-11.8	7.0	1.0	1.3	1.6	1.8
Railroad rolling stock manufacturing	3365	-25	170	195	203	163	-12.6	-4.2	24.3	0.2	0.1	-0.1	0.0
Ship and boat building	3366	10	101	91	91	92	11.2	-0.5	-0.5	0.8	0.4	-0.1	-0.2
Furniture and related product manufacturing	337	3	1,193	1,189	1,188	1,183	0.3	0.1	0.5	0.2	0.3	0.3	0.4
Miscellaneous manufacturing	339	7	708	701	698	682	1.0	0.5	2.2	1.4	1.9	2.2	2.2
Non-durable goods industries [1]		**174**	**21,307**	**21,134**	**20,654**	**20,708**	**0.8**	**2.3**	**-0.3**	**0.9**	**1.1**	**1.3**	**1.4**
Durable goods industries [2]		**569**	**28,616**	**28,047**	**28,059**	**27,658**	**2.0**	**0.0**	**1.4**	**0.9**	**1.2**	**1.5**	**1.6**
Manufacturing		**743**	**49,923**	**49,181**	**48,712**	**48,366**	**1.5**	**1.0**	**0.7**	**0.9**	**1.2**	**1.4**	**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	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% change from 2003	Average 2004	% change from 2002	2003
		$millions									
Food manufacturing	311	4,740	4,684	4,685	4,701	4,473	4,434	3.4	4,668	0.2	4,564
Beverage and tobacco product manufacturing	312	1,703	1,681	1,682	1,696	1,676	1,709	-1.0	1,668	2.7	1,650
Textile mills	313	478	472	472	470	527	535	-11.3	472	-8.0	519
Textile product mills	314	358	360	357	359	371	379	-4.7	357	-4.2	365
Clothing manufacturing	315	1,286	1,313	1,320	1,323	1,552	1,480	-10.0	1,324	0.9	1,451
Leather and allied product manufacturing	316	156	138	126	120	166	153	-10.4	129	-9.8	141
Wood product manufacturing	321	4,220	4,393	4,670	5,153	4,377	4,689	-7.2	4,642	-0.9	4,533
Paper manufacturing	322	3,599	3,581	3,580	3,531	3,651	3,670	-2.4	3,550	-1.1	3,588
Printing and related support activities	323	842	836	857	867	871	875	-2.1	851	-2.4	870
Petroleum and coal products manufacturing	324	2,281	2,293	2,291	2,216	2,063	1,939	7.9	2,194	0.8	2,009
Chemical manufacturing	325	5,989	6,030	6,204	6,234	5,668	5,822	7.2	6,093	9.3	5,652
Plastics and rubber products manufacturing	326	2,350	2,372	2,346	2,331	2,292	2,382	0.2	2,333	4.4	2,279
Non-metallic mineral product manufacturing	327	1,136	1,162	1,173	1,156	1,150	1,171	0.0	1,154	-0.2	1,125
Primary metal manufacturing	331	4,923	4,765	4,531	4,504	4,943	5,066	-7.1	4,673	-1.5	4,902
Fabricated metal product manufacturing	332	3,902	3,797	3,736	3,617	3,753	3,854	-2.4	3,691	1.3	3,676
Machinery manufacturing	333	4,644	4,681	4,572	4,514	4,542	4,632	-0.1	4,566	-3.2	4,522
Computer and electronic product manufacturing	334	3,909	4,081	3,955	3,864	4,311	4,529	-11.1	4,026	-11.3	4,398
Electrical equipment, appliance and component manufacturing	335	1,903	1,924	1,855	1,811	1,870	1,943	-4.5	1,847	-2.8	1,870
Transportation equipment manufacturing	336	9,460	9,707	9,299	9,109	9,574	9,929	-8.3	9,182	-17.9	9,637
Motor vehicle manufacturing	3361	1,440	1,573	1,647	1,522	1,246	1,360	11.1	1,477	-8.6	1,288
Motor vehicle body and trailer manufacturing	3362	469	448	464	458	473	477	-8.7	448	12.3	466
Motor vehicle parts manufacturing	3363	1,906	1,942	1,907	1,918	1,833	1,863	1.7	1,894	13.1	1,847
Aerospace product and parts manufacturing	3364	4,587	4,701	4,293	4,240	4,827	5,017	-14.7	4,358	-30.5	4,875
Railroad rolling stock manufacturing	3365	809	793	741	715	920	922	-20.3	746	-7.5	876
Ship and boat building	3366	98	104	109	115	110	120	-14.6	113	-1.8	129
Furniture and related product manufacturing	337	1,217	1,195	1,206	1,217	1,234	1,260	-4.8	1,203	2.7	1,238
Miscellaneous manufacturing	339	1,263	1,285	1,332	1,288	1,218	1,228	4.2	1,282	4.1	1,217
Non-durable goods industries [1]		**23,781**	**23,760**	**23,920**	**23,848**	**23,311**	**23,379**	**1.6**	**23,638**	**2.3**	**23,087**
Durable goods industries [2]		**36,577**	**36,991**	**36,330**	**36,233**	**36,971**	**38,300**	**-5.8**	**36,266**	**-7.1**	**37,118**
Manufacturing		**60,359**	**60,750**	**60,250**	**60,081**	**60,282**	**61,680**	**-3.0**	**59,904**	**-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 May	Current periods				Change from previous month			Trend change from previous month			
			June 2004	May 2004	Apr. 2004	Mar. 2004	June 2004	May 2004	Apr. 2004	June 2004	May 2004	Apr. 2004	Mar. 2004
		$ millions					percentage						
Food manufacturing	311	23	4,784	4,761	4,767	4,730	0.5	-0.1	0.8	0.4	0.5	0.7	0.7
Beverage and tobacco product manufacturing	312	26	1,659	1,633	1,628	1,649	1.6	0.3	-1.3	0.3	0.3	0.2	0.1
Textile mills	313	8	480	472	469	467	1.6	0.7	0.5	0.4	0.3	0.0	-0.4
Textile product mills	314	-1	357	358	353	353	-0.3	1.3	0.0	0.3	0.3	0.2	0.1
Clothing manufacturing	315	-60	1,226	1,285	1,310	1,330	-4.6	-1.9	-1.5	-1.5	-1.7	-1.9	-1.8
Leather and allied product manufacturing	316	4	133	129	126	128	3.1	2.2	-1.3	1.0	0.7	0.2	-0.2
Wood product manufacturing	321	29	4,417	4,387	4,317	4,349	0.7	1.6	-0.7	0.5	0.5	0.4	0.4
Paper manufacturing	322	73	3,590	3,517	3,510	3,485	2.1	0.2	0.7	0.4	0.3	0.1	-0.1
Printing and related support activities	323	7	860	853	853	848	0.8	0.0	0.6	0.3	0.1	-0.1	-0.2
Petroleum and coal products manufacturing	324	-8	2,273	2,281	2,190	2,118	-0.3	4.1	3.4	1.8	2.1	2.3	2.3
Chemical manufacturing	325	81	6,036	5,955	5,940	5,988	1.4	0.2	-0.8	0.3	0.3	0.4	0.5
Plastics and rubber products manufacturing	326	20	2,332	2,312	2,285	2,278	0.9	1.2	0.3	0.4	0.4	0.4	0.3
Non-metallic mineral product manufacturing	327	4	1,118	1,114	1,121	1,115	0.4	-0.7	0.6	-0.1	-0.1	-0.2	-0.2
Primary metal manufacturing	331	127	4,950	4,823	4,641	4,632	2.6	3.9	0.2	0.7	0.7	0.7	0.6
Fabricated metal product manufacturing	332	108	3,850	3,742	3,706	3,593	2.9	1.0	3.2	1.2	1.4	1.4	1.2
Machinery manufacturing	333	17	4,640	4,623	4,539	4,535	0.4	1.8	0.1	0.3	0.5	0.5	0.6
Computer and electronic product manufacturing	334	-5	4,028	4,033	3,948	3,952	-0.1	2.2	-0.1	0.4	0.1	-0.3	-0.7
Electrical equipment, appliance and component manufacturing	335	-18	1,874	1,892	1,822	1,792	-0.9	3.8	1.7	0.5	0.7	0.7	0.7
Transportation equipment manufacturing	336	-86	9,432	9,518	9,324	9,027	-0.9	2.1	3.3	0.9	1.1	1.1	0.9
Motor vehicle manufacturing	3361	-27	1,490	1,517	1,613	1,472	-1.8	-6.0	9.6	2.7	3.2	3.6	3.7
Motor vehicle body and trailer manufacturing	3362	11	459	447	446	435	2.6	0.3	2.5	1.3	1.4	1.2	0.8
Motor vehicle parts manufacturing	3363	-21	1,916	1,937	1,901	1,893	-1.1	1.9	0.4	0.6	0.7	0.8	0.7
Aerospace product and parts manufacturing	3364	-55	4,526	4,581	4,374	4,258	-1.2	4.7	2.7	0.4	0.5	0.4	0.3
Railroad rolling stock manufacturing	3365	16	809	793	741	715	2.0	7.0	3.6	2.3	2.6	2.1	0.9
Ship and boat building	3366	-3	106	109	110	113	-2.6	-1.4	-2.1	-2.3	-2.5	-2.4	-2.2
Furniture and related product manufacturing	337	20	1,210	1,189	1,202	1,203	1.7	-1.1	-0.1	0.1	0.1	0.0	0.0
Miscellaneous manufacturing	339	-15	1,259	1,274	1,317	1,265	-1.2	-3.3	4.1	-0.1	0.1	0.4	0.6
Non-durable goods industries [1]		**173**	**23,728**	**23,555**	**23,432**	**23,373**	**0.7**	**0.5**	**0.3**	**0.5**	**0.5**	**0.5**	**0.5**
Durable goods industries [2]		**183**	**36,778**	**36,595**	**35,939**	**35,464**	**0.5**	**1.8**	**1.3**	**0.5**	**0.6**	**0.6**	**0.4**
Manufacturing		**357**	**60,506**	**60,149**	**59,371**	**58,838**	**0.6**	**1.3**	**0.9**	**0.5**	**0.6**	**0.5**	**0.5**

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 6-1

Unfilled orders by selected major group and industries - Unadjusted

	NAICS Code	Current periods				Previous year			Year to date	Average per month	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$millions									
Textile mills	313	233	227	213	207	220	229	-12.9	217	-20.6	233
Textile product mills	314	85	88	92	89	77	84	-7.1	87	6.6	86
Clothing manufacturing	315	223	215	209	195	234	237	-8.4	198	3.6	199
Leather and allied product manufacturing	316	25	25	24	28	37	34	-17.4	24	-2.2	28
Plastics and rubber products manufacturing	326	411	433	455	431	336	371	11.1	408	1.9	366
Primary metal manufacturing	331	1,943	1,868	1,850	1,884	1,706	1,771	4.1	1,854	-2.8	1,757
Fabricated metal product manufacturing	332	4,117	4,137	4,098	3,783	3,418	3,497	9.7	3,880	-1.7	3,522
Machinery manufacturing	333	5,040	5,015	4,781	4,660	4,217	4,311	6.0	4,737	-14.5	4,380
Computer and electronic product manufacturing	334	3,227	3,085	3,100	3,082	3,347	3,614	-12.8	3,177	-5.5	3,483
Electrical equipment, appliance and component manufacturing	335	896	889	880	879	859	938	-6.7	875	-3.5	901
Transportation equipment manufacturing	336	18,295	18,865	18,861	18,464	20,299	20,504	-12.6	18,614	-26.7	20,074
Motor vehicle manufacturing	3361	838	866	814	750	526	521	31.6	758	-25.1	566
Motor vehicle body and trailer manufacturing	3362	467	491	504	498	419	446	3.3	476	-1.5	430
Motor vehicle parts manufacturing	3363	1,184	1,204	1,222	1,220	1,022	1,033	14.1	1,207	25.4	1,093
Aerospace product and parts manufacturing	3364	11,310	11,898	11,902	11,856	13,085	13,632	-16.7	11,847	-34.2	13,167
Ship and boat building	3366	34	41	51	56	111	110	-37.9	51	230.1	83
Miscellaneous manufacturing	339	179	188	187	181	152	151	17.9	177	-13.4	162
Non-durable goods industries [1]		**2,157**	**2,022**	**2,021**	**1,982**	**2,224**	**1,898**	**-2.3**	**1,976**	**7.1**	**2,029**
Durable goods industries [2]		**35,252**	**35,553**	**35,233**	**34,360**	**35,357**	**36,127**	**-6.3**	**34,759**	**-18.7**	**35,629**
Manufacturing		**37,409**	**37,576**	**37,254**	**36,343**	**37,581**	**38,025**	**-6.1**	**36,735**	**-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 May	Current periods				Change from previous month			Trend change from previous month			
			June 2004	May 2004	Apr. 2004	Mar. 2004	June 2004	May 2004	Apr. 2004	June 2004	May 2004	Apr. 2004	Mar. 2004
		$ millions					percentage						
Textile mills	313	11	237	226	208	199	4.8	8.9	4.3	1.3	1.2	0.9	0.4
Textile product mills	314	0	88	88	85	84	0.1	4.2	0.6	0.7	0.9	0.9	0.8
Clothing manufacturing	315	5	190	185	184	186	2.7	0.6	-1.2	0.4	0.4	0.1	-0.2
Leather and allied product manufacturing	316	-1	18	18	20	26	-3.0	-8.4	-23.9	-6.4	-8.2	-8.9	-8.4
Plastics and rubber products manufacturing	326	-2	424	426	450	426	-0.5	-5.2	5.6	0.7	1.6	2.4	2.9
Primary metal manufacturing	331	94	1,907	1,812	1,787	1,826	5.2	1.4	-2.1	0.8	1.0	0.9	0.8
Fabricated metal product manufacturing	332	-19	4,117	4,137	4,098	3,783	-0.5	0.9	8.3	1.9	2.5	3.0	3.1
Machinery manufacturing	333	25	5,040	5,015	4,781	4,660	0.5	4.9	2.6	1.0	1.3	1.6	1.9
Computer and electronic product manufacturing	334	142	3,227	3,085	3,100	3,082	4.6	-0.5	0.6	0.7	0.5	0.0	-0.4
Electrical equipment, appliance and component manufacturing	335	7	896	889	880	879	0.8	1.1	0.0	0.7	1.2	1.5	1.5
Transportation equipment manufacturing	336	-327	18,381	18,708	19,025	18,546	-1.7	-1.7	2.6	-0.1	0.1	0.3	0.4
Motor vehicle manufacturing	3361	-28	838	866	814	750	-3.2	6.3	8.6	2.3	3.5	4.7	5.9
Motor vehicle body and trailer manufacturing	3362	-6	475	480	479	473	-1.2	0.3	1.3	0.8	1.3	1.9	2.2
Motor vehicle parts manufacturing	3363	6	1,252	1,246	1,275	1,225	0.5	-2.3	4.1	0.6	0.9	1.3	1.6
Aerospace product and parts manufacturing	3364	-389	11,325	11,714	12,043	11,960	-3.3	-2.7	0.7	-0.8	-0.6	-0.3	0.0
Ship and boat building	3366	-8	29	37	46	55	-21.1	-20.5	-15.2	-14.1	-14.4	-13.6	-12.3
Miscellaneous manufacturing	339	0	187	187	188	184	0.1	-0.8	2.5	0.7	1.2	1.7	1.8
Non-durable goods industries [1]		**157**	**2,136**	**1,979**	**1,974**	**1,954**	**8.0**	**0.3**	**1.0**	**2.2**	**2.2**	**1.8**	**1.1**
Durable goods industries [2]		**-43**	**35,284**	**35,327**	**35,323**	**34,407**	**-0.1**	**0.0**	**2.7**	**0.5**	**0.7**	**0.9**	**0.9**
Manufacturing		**114**	**37,421**	**37,306**	**37,297**	**36,362**	**0.3**	**0.0**	**2.6**	**0.6**	**0.8**	**0.9**	**0.9**

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

Table 7-1

New orders by selected major group and industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	2004	% Change from 2002	2003
		$millions									
Textile mills	313	306	312	288	299	289	294	-0.3	1,719	-13.6	3,356
Textile product mills	314	193	194	195	193	198	204	-4.9	1,125	-11.2	2,290
Clothing manufacturing	315	503	531	588	616	508	559	-5.6	3,321	-6.4	7,066
Leather and allied product manufacturing	316	42	41	38	58	51	55	-19.0	266	-12.6	747
Plastics and rubber products manufacturing	326	2,365	2,251	2,254	2,372	2,104	2,231	4.2	13,014	0.1	24,666
Primary metal manufacturing	331	4,010	3,786	3,708	4,116	2,861	3,085	18.4	22,349	0.8	37,522
Fabricated metal product manufacturing	332	3,048	2,939	3,106	3,058	2,565	2,565	12.2	17,011	0.7	31,096
Machinery manufacturing	333	2,548	2,481	2,375	2,568	2,033	1,992	13.6	14,063	-0.7	25,351
Computer and electronic product manufacturing	334	2,047	1,632	1,521	2,010	1,367	1,455	19.0	10,101	-17.1	18,169
Electrical equipment, appliance and component manufacturing	335	974	899	888	969	797	841	9.9	5,374	-6.8	9,835
Transportation equipment manufacturing	336	11,595	11,350	11,982	11,684	10,479	11,031	10.7	67,275	-6.3	114,188
Motor vehicle manufacturing	3361	7,287	6,672	6,644	7,144	6,334	6,625	1.2	38,658	-6.5	69,172
Motor vehicle body and trailer manufacturing	3362	329	347	340	364	293	350	4.7	2,034	-2.2	3,637
Motor vehicle parts manufacturing	3363	2,905	2,928	3,026	3,162	2,664	2,740	6.5	17,299	-1.0	31,557
Aerospace product and parts manufacturing	3364	563	975	1,259	540	388	984	310.2	6,342	-17.0	5,676
Ship and boat building	3366	107	110	112	101	94	136	-10.0	622	-3.2	1,134
Miscellaneous manufacturing	339	732	722	683	741	633	625	10.6	3,991	4.1	7,498
Non-durable goods industries [1]		**22,391**	**21,996**	**20,586**	**21,615**	**20,197**	**20,479**	**3.9**	**123,866**	**1.4**	**236,934**
Durable goods industries [2]		**31,021**	**29,672**	**29,772**	**30,625**	**25,747**	**26,550**	**12.9**	**171,606**	**-3.8**	**301,074**
Manufacturing		**53,412**	**51,668**	**50,358**	**52,239**	**45,943**	**47,029**	**9.0**	**295,473**	**-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 May	Current periods				Change from previous month			Trend change from previous month			
			June 2004	May 2004	Apr. 2004	Mar. 2004	June 2004	May 2004	Apr. 2004	June 2004	May 2004	Apr. 2004	Mar. 2004
		$ millions					percentage						
Textile mills	313	-7	288	295	282	279	-2.4	4.6	1.2	0.2	0.3	0.4	0.4
Textile product mills	314	-7	181	188	185	184	-3.5	1.2	0.7	-0.2	-0.1	0.0	0.1
Clothing manufacturing	315	0	562	562	565	557	-0.1	-0.6	1.5	-0.1	-0.3	-0.4	-0.5
Leather and allied product manufacturing	316	2	49	47	47	56	4.5	-0.5	-15.7	-1.4	-2.6	-3.6	-4.1
Plastics and rubber products manufacturing	326	79	2,158	2,079	2,134	2,197	3.8	-2.6	-2.9	0.4	0.4	0.5	0.6
Primary metal manufacturing	331	187	3,886	3,700	3,637	3,685	5.0	1.7	-1.3	1.1	1.8	2.4	2.7
Fabricated metal product manufacturing	332	2	2,857	2,855	3,118	2,908	0.1	-8.4	7.2	-0.1	0.5	1.2	1.8
Machinery manufacturing	333	-103	2,374	2,477	2,354	2,333	-4.1	5.2	0.9	0.6	0.8	0.8	0.9
Computer and electronic product manufacturing	334	242	1,901	1,659	1,718	1,706	14.6	-3.4	0.7	0.9	1.4	1.8	2.0
Electrical equipment, appliance and component manufacturing	335	14	901	887	874	867	1.5	1.5	0.8	0.1	0.4	0.8	1.1
Transportation equipment manufacturing	336	176	10,499	10,323	11,188	10,054	1.7	-7.7	11.3	0.6	0.9	1.2	1.6
Motor vehicle manufacturing	3361	84	6,220	6,136	6,073	6,035	1.4	1.0	0.6	1.3	1.7	2.0	2.0
Motor vehicle body and trailer manufacturing	3362	-5	315	320	312	331	-1.4	2.3	-5.7	0.2	0.3	0.6	0.8
Motor vehicle parts manufacturing	3363	-69	2,719	2,787	2,874	2,782	-2.5	-3.0	3.3	-0.2	0.1	0.4	0.7
Aerospace product and parts manufacturing	3364	78	765	687	1,235	480	11.3	-44.3	157.0	-1.2	-1.8	-1.3	0.5
Ship and boat building	3366	12	93	81	83	79	14.6	-2.0	4.7	2.1	1.2	0.1	-0.5
Miscellaneous manufacturing	339	9	708	700	702	694	1.2	-0.4	1.2	1.2	1.8	2.1	2.2
Non-durable goods industries [1]		**326**	**21,465**	**21,139**	**20,673**	**20,801**	**1.5**	**2.3**	**-0.6**	**0.9**	**1.2**	**1.4**	**1.4**
Durable goods industries [2]		**522**	**28,573**	**28,051**	**28,975**	**27,580**	**1.9**	**-3.2**	**5.1**	**0.6**	**1.0**	**1.4**	**1.8**
Manufacturing		**848**	**50,038**	**49,190**	**49,648**	**48,381**	**1.7**	**-0.9**	**2.6**	**0.7**	**1.1**	**1.4**	**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	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	439	447	444	442	397	431	3.1	2,586	-1.9	5,099
Starch and vegetable fat and oil manufacturing	31122	311	316	321	354	235	271	22.9	1,833	11.4	3,117
Sugar and confectionery product manufacturing	3113	317	306	296	308	292	298	3.4	1,781	10.0	3,764
Fruit and vegetable preserving and specialty food manufacturing	3114	508	506	520	509	469	493	4.8	3,055	-0.9	5,974
Dairy product manufacturing	3115	1,002	990	944	959	972	955	6.3	5,632	9.8	10,958
Meat product manufacturing	3116	1,755	1,759	1,596	1,643	1,321	1,466	14.9	9,686	-3.9	17,027
Cookie, cracker and pasta manufacturing	31182	129	134	131	133	124	130	1.5	779	-2.1	1,577
Other food manufacturing	3119	428	411	391	434	427	426	2.9	2,406	4.1	4,936
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	317	317	261	278	332	324	-1.3	1,589	12.7	3,336
Breweries	31212	461	407	345	346	385	355	18.1	2,049	1.0	3,858
Wineries	31213	78	65	58	61	62	61	15.9	360	-2.6	706
Distilleries	31214	58	52	49	51	57	59	-29.4	289	-18.0	831
Tobacco manufacturing	3122	267	268	243	257	306	281	-7.1	1,470	5.1	3,301
313 Textile mills											
Fibre, yarn and thread mills	3131	54	56	50	54	48	47	5.5	303	-12.6	547
Fabric mills	3132	188	186	176	187	186	198	-6.8	1,056	-10.6	2,180
Textile and fabric finishing and fabric coating	3133	58	56	56	58	63	63	-6.1	335	-10.8	694
314 Textile product mills											
Carpet and rug mills	31411	72	69	70	69	73	79	-8.0	405	-8.6	824
Textile bag and canvas mills	31491	26	22	22	22	27	26	-7.9	123	-30.9	267
315 Clothing manufacturing											
Hosiery and sock mills	31511	28	33	34	35	40	42	-15.2	202	-5.1	511
Other clothing knitting mills	31519	43	47	46	45	41	41	6.0	262	-0.4	587
Men's and boys' cut and sew clothing manufacturing	31522	133	144	159	164	153	165	-9.6	906	-4.6	2,078
Women's and girls' cut and sew clothing manufacturing	31523	177	188	210	236	170	187	-4.7	1,178	-3.5	2,471
Clothing accessories and other clothing manufacturing	3159	25	24	24	22	24	26	0.5	137	-4.1	289
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	20	18	19	25	20	23	-1.8	131	-17.7	401
321 Wood product manufacturing											
Sawmills and wood preservation	3211	1,757	1,700	1,540	1,552	1,286	1,301	16.1	8,887	-16.1	14,961
Veneer, plywood and engineered wood product manufacturing	3212	880	953	964	918	617	595	48.8	5,098	19.5	7,928
Other wood product manufacturing	3219	866	844	755	734	752	770	6.1	4,355	6.2	8,359
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	1,970	2,017	1,890	2,013	1,815	1,901	-0.7	11,413	-6.6	22,490
Paperboard container manufacturing	32221	464	429	429	455	463	481	-7.8	2,575	6.6	5,538
Paper bag and coated and treated paper manufacturing	32222	246	230	230	261	250	264	-10.4	1,420	0.8	3,033
Other converted paper product manufacturing	32229	138	133	129	144	132	149	-0.4	806	-2.7	1,624
323 Printing and related support activities											
Printing	32311	915	909	905	999	855	906	1.0	5,352	-1.5	10,730
Support activities for printing	32312	67	70	74	75	75	74	-9.9	410	10.5	860
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	3,517	3,462	3,142	3,298	2,615	2,686	8.5	19,445	10.6	34,729
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	268	269	268	291	253	257	6.3	1,609	12.8	3,023
Other basic organic chemical manufacturing	32519	239	230	305	347	277	281	-4.5	1,715	-6.6	3,423
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	787	736	711	738	608	651	7.1	4,204	0.6	7,461
Pesticide and other agricultural chemical manufacturing	32532	78	92	103	101	89	70	22.1	480	21.2	444
Pharmaceutical and medicine manufacturing	3254	795	744	738	881	787	730	5.1	4,511	4.9	8,506
Paint and coating manufacturing	32551	204	193	191	195	196	186	6.0	1,081	3.5	2,028
Adhesive manufacturing	32552	78	77	65	70	64	77	6.1	402	8.4	772
Soap and cleaning compound manufacturing	32561	137	122	139	138	148	143	-12.8	782	-16.2	1,689
Toilet preparation manufacturing	32562	123	100	106	129	110	97	6.8	670	2.3	1,289
Printing ink manufacturing	32591	39	37	41	46	38	40	2.8	236	1.6	467
All other chemical product manufacturing	32599	373	343	349	375	318	330	5.3	2,096	2.8	3,989

Table 8-1 – continued

Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	2004	% Change from 2002	2003
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	197	192	175	172	167	173	7.2	984	2.5	1,836
Polystyrene foam product manufacturing	32614	58	55	56	55	54	46	13.6	297	7.3	561
Other plastic product manufacturing	32619	1,185	1,098	1,081	1,107	1,047	1,096	3.6	6,214	2.5	11,881
Other rubber product manufacturing	32629	156	156	149	164	143	149	2.2	904	-11.6	1,750
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	74	71	62	64	68	71	-1.7	360	5.4	722
Glass and glass product manufacturing	3272	197	187	182	181	192	193	1.4	1,047	0.0	2,084
Cement manufacturing	32731	174	154	117	98	158	144	10.0	675	1.2	1,479
Ready-mix concrete manufacturing	32732	313	267	229	186	295	261	12.7	1,247	5.1	2,761
Other concrete product manufacturing	32739	123	109	90	76	107	95	14.7	512	9.6	1,143
Abrasive product manufacturing	32791	33	26	28	29	24	28	-5.2	159	-13.5	294
All other non-metallic mineral product manufacturing	32799	158	152	160	149	129	139	9.5	867	12.3	1,683
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,136	991	996	1,060	783	837	15.2	5,881	-1.3	9,877
Iron and steel pipes and tubes manufacturing from purchased steel	33121	309	265	239	346	223	214	21.1	1,728	6.2	2,908
Foundries	3315	288	265	268	301	295	275	-2.3	1,621	1.4	3,223
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	56	60	61	62	47	54	15.7	344	4.4	583
Plate work and fabricated structural product manufacturing	33231	519	452	425	438	405	358	14.5	2,529	4.6	4,928
Power boiler and heat exchanger manufacturing	33241	102	139	115	137	166	101	8.8	663	31.9	1,275
Spring and wire product manufacturing	3326	133	135	129	140	136	144	-8.4	772	-12.0	1,575
Coating, engraving, heat treating and allied activities	3328	314	289	286	314	246	261	6.6	1,685	-0.6	3,043
Other fabricated metal product manufacturing	3329	339	324	309	323	300	315	0.7	1,805	-6.5	3,486
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	183	180	209	225	157	175	5.3	1,137	-12.0	1,956
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	218	191	216	202	198	186	5.5	1,214	-7.2	2,465
All other general-purpose machinery manufacturing	33399	250	207	182	225	168	191	5.7	1,191	-1.9	2,336
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	289	241	161	307	269	235	-6.5	1,362	-22.7	3,046
Communications equipment manufacturing	3342	782	557	542	738	638	414	21.5	3,594	-20.2	6,180
Audio and video equipment manufacturing	3343	18	12	15	22	16	16	-7.7	96	-12.2	211
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	83	85	84	87	81	84	1.4	478	-9.3	968
Small electrical appliance manufacturing	33521	21	22	21	27	20	23	11.4	138	-1.7	263
Major appliance manufacturing	33522	181	180	171	174	159	161	6.1	986	-3.4	1,754
Battery manufacturing	33591	20	21	21	20	18	18	10.7	117	19.0	217
Communication and energy wire and cable manufacturing	33592	210	185	204	221	192	173	12.0	1,175	-14.5	2,170
All other electrical equipment and component manufacturing	33599	39	40	40	42	34	38	11.8	234	-0.1	429
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	7,315	6,621	6,579	7,031	6,329	6,662	0.2	38,413	-6.4	69,258
Motor vehicle parts manufacturing	3363	2,925	2,945	3,024	3,178	2,674	2,726	6.2	17,319	-0.1	31,433
Aerospace product and parts manufacturing	3364	1,151	979	1,213	1,102	935	1,042	11.2	6,556	1.5	11,586
Railroad rolling stock manufacturing	3365	186	202	194	189	231	212	-16.3	1,127	-7.7	2,370
Ship and boat building	3366	115	119	117	111	93	141	6.9	653	-5.4	1,100
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	683	665	667	699	647	665	3.5	3,988	-1.3	7,751
Office furniture (including fixtures) manufacturing	3372	454	425	420	470	437	417	-0.6	2,563	5.3	5,107
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	256	223	240	276	201	186	29.0	1,415	10.7	2,287
Other miscellaneous manufacturing	3399	485	499	437	454	431	432	1.6	2,555	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	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	295	290	304	297	280	267	5.5	293	4.2	281
Starch and vegetable fat and oil manufacturing	31122	198	188	236	241	158	155	22.2	228	4.6	180
Sugar and confectionery product manufacturing	3113	346	314	296	294	327	299	1.1	305	5.0	310
Fruit and vegetable preserving and specialty food manufacturing	3114	852	853	860	858	779	797	5.5	863	5.3	853
Dairy product manufacturing	3115	873	882	894	886	818	815	6.2	877	-3.6	813
Meat product manufacturing	3116	851	836	820	813	765	759	-0.5	804	-5.5	797
Cookie, cracker and pasta manufacturing	31182	122	121	121	126	133	130	-7.3	122	7.1	128
Other food manufacturing	3119	486	483	473	489	445	443	10.5	479	2.9	455
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	267	270	270	248	273	280	-1.3	250	7.8	250
Breweries	31212	210	206	201	190	194	201	5.9	196	0.8	185
Wineries	31213	261	258	254	254	253	243	2.1	255	4.8	251
Distilleries	31214	514	495	495	480	543	552	-11.6	489	3.3	528
Tobacco manufacturing	3122	450	452	462	524	413	434	7.7	477	-1.1	434
313 Textile mills											
Fibre, yarn and thread mills	3131	64	60	60	61	70	68	-8.5	62	0.3	69
Fabric mills	3132	337	335	335	335	386	392	-14.3	335	-12.3	378
Textile and fabric finishing and fabric coating	3133	77	77	76	74	71	75	1.8	75	11.7	73
314 Textile product mills											
Carpet and rug mills	31411	90	90	87	88	103	105	-16.0	88	2.2	101
Textile bag and canvas mills	31491	41	40	39	38	42	45	-13.6	39	-32.1	42
315 Clothing manufacturing											
Hosiery and sock mills	31511	117	118	121	134	155	144	-8.7	127	6.8	142
Other clothing knitting mills	31519	175	173	164	157	191	184	-4.0	160	6.1	164
Men’s and boys’ cut and sew clothing manufacturing	31522	397	411	411	430	539	525	-18.4	425	6.1	507
Women’s and girls’ cut and sew clothing manufacturing	31523	385	395	410	393	429	398	-3.2	399	1.0	416
Clothing accessories and other clothing manufacturing	3159	59	60	60	59	66	63	1.9	61	8.0	62
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	110	92	80	74	115	101	-10.4	83	-7.3	92
321 Wood product manufacturing											
Sawmills and wood preservation	3211	2,455	2,570	2,831	3,206	2,620	2,870	-10.5	2,809	-5.3	2,769
Veneer, plywood and engineered wood product manufacturing	3212	784	798	827	901	746	793	-0.4	824	5.4	761
Other wood product manufacturing	3219	981	1,026	1,011	1,047	1,011	1,026	-2.4	1,008	8.0	1,003
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	2,529	2,505	2,512	2,473	2,533	2,545	-2.0	2,490	-3.1	2,508
Paperboard container manufacturing	32221	493	489	481	480	497	499	-1.5	478	2.8	479
Paper bag and coated and treated paper manufacturing	32222	358	367	370	370	396	399	-6.8	371	4.9	391
Other converted paper product manufacturing	32229	151	146	144	138	156	152	-5.5	142	0.9	146
323 Printing and related support activities											
Printing	32311	809	804	824	833	841	842	-1.2	819	-0.5	832
Support activities for printing	32312	33	32	33	34	30	33	-19.8	33	-32.0	37
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	1,935	1,952	1,949	1,890	1,749	1,616	8.3	1,865	1.4	1,703
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	264	259	266	265	250	247	8.7	258	8.7	243
Other basic organic chemical manufacturing	32519	269	270	316	362	344	363	-12.1	308	8.8	346
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	623	640	595	603	573	629	5.0	606	3.2	566
Pesticide and other agricultural chemical manufacturing	32532	70	69	102	112	78	80	11.4	92	29.1	84
Pharmaceutical and medicine manufacturing	3254	2,769	2,808	2,837	2,801	2,552	2,599	12.6	2,816	14.4	2,543
Paint and coating manufacturing	32551	263	263	280	281	283	279	-0.6	272	2.8	268
Adhesive manufacturing	32552	106	104	106	104	101	92	11.6	104	12.8	95
Soap and cleaning compound manufacturing	32561	92	97	96	98	107	114	-13.2	96	-29.0	106
Toilet preparation manufacturing	32562	197	201	189	192	195	202	-1.9	192	8.6	194
Printing ink manufacturing	32591	87	84	83	88	73	71	17.7	84	12.0	74
All other chemical product manufacturing	32599	410	396	392	384	414	409	-6.3	389	1.3	399

Table 8-2 – continued

Inventory owned for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	Average 2004	% Change from 2002	2003
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	359	355	374	354	358	362	-4.1	351	-8.5	340
Polystyrene foam product manufacturing	32614	63	64	60	60	53	56	5.9	59	16.6	54
Other plastic product manufacturing	32619	957	981	945	959	938	974	0.8	958	7.4	938
Other rubber product manufacturing	32629	130	136	141	136	139	146	-5.8	135	-12.9	138
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	71	75	77	75	72	85	-9.5	73	-8.1	76
Glass and glass product manufacturing	3272	245	248	254	251	252	257	-1.6	250	-2.1	252
Cement manufacturing	32731	189	194	201	203	192	198	-1.9	199	-6.8	182
Ready-mix concrete manufacturing	32732	84	84	83	81	89	88	-3.8	83	-7.7	87
Other concrete product manufacturing	32739	132	141	142	135	120	123	20.0	136	11.8	117
Abrasive product manufacturing	32791	48	50	49	49	64	66	-27.4	49	-19.4	61
All other non-metallic mineral product manufacturing	32799	123	125	125	130	131	131	-3.9	127	8.2	131
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,761	1,713	1,584	1,610	1,943	1,983	-15.1	1,707	-1.8	1,950
Iron and steel pipes and tubes manufacturing from purchased steel	33121	506	507	468	432	504	530	-4.9	485	2.3	495
Foundries	3315	295	310	299	284	307	323	-4.4	290	1.6	291
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	83	85	84	84	81	82	-2.1	83	2.2	83
Plate work and fabricated structural product manufacturing	33231	802	769	761	697	719	727	5.1	725	-1.7	677
Power boiler and heat exchanger manufacturing	33241	90	87	90	89	93	105	-13.1	89	4.1	96
Spring and wire product manufacturing	3326	176	165	154	148	180	189	-20.6	155	-11.6	172
Coating, engraving, heat treating and allied activities	3328	169	176	171	169	156	165	-3.0	171	-1.9	169
Other fabricated metal product manufacturing	3329	621	596	608	609	573	582	5.2	607	6.5	579
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	400	440	426	423	462	471	-14.4	429	1.2	474
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	340	320	320	314	349	338	-3.1	316	-7.2	324
All other general-purpose machinery manufacturing	33399	533	584	560	536	505	488	13.0	553	15.1	530
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	525	561	574	562	670	686	-17.8	560	1.2	669
Communications equipment manufacturing	3342	2,069	2,152	2,087	2,049	2,295	2,458	-12.8	2,160	-12.2	2,387
Audio and video equipment manufacturing	3343	44	55	54	53	59	61	-12.9	54	5.0	59
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	131	130	131	134	134	136	-8.0	134	-9.1	141
Small electrical appliance manufacturing	33521	42	40	41	39	38	38	4.6	40	9.3	40
Major appliance manufacturing	33522	185	206	204	199	189	203	0.0	194	11.9	186
Battery manufacturing	33591	53	47	45	44	37	35	32.4	46	-10.8	37
Communication and energy wire and cable manufacturing	33592	840	849	783	768	810	841	-4.2	800	-0.1	808
All other electrical equipment and component manufacturing	33599	105	103	105	101	104	106	-2.0	102	-2.0	103
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	1,440	1,573	1,647	1,522	1,246	1,360	11.1	1,477	-8.6	1,288
Motor vehicle parts manufacturing	3363	1,906	1,942	1,907	1,918	1,833	1,863	1.7	1,894	13.1	1,847
Aerospace product and parts manufacturing	3364	4,587	4,701	4,293	4,240	4,827	5,017	-14.7	4,358	-30.5	4,875
Railroad rolling stock manufacturing	3365	809	793	741	715	920	922	-20.3	746	-7.5	876
Ship and boat building	3366	98	104	109	115	110	120	-14.6	113	-1.8	129
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	770	760	762	778	800	816	-6.7	766	1.3	790
Office furniture (including fixtures) manufacturing	3372	332	323	332	328	319	328	0.4	327	8.9	335
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	296	310	303	291	250	241	25.2	302	13.0	255
Other miscellaneous manufacturing	3399	966	975	1,029	996	968	986	-0.9	980	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							
June 2003	25,401	13,943	20,938	60,282	25,824	13,870	20,788	60,481
July 2003	25,574	13,406	20,505	59,485	25,873	13,602	20,654	60,129
August 2003	25,520	13,515	20,386	59,420	25,705	13,443	20,393	59,541
September 2003	25,155	13,396	20,250	58,801	25,527	13,401	20,379	59,307
October 2003	25,050	13,298	19,852	58,200	25,208	13,313	20,227	58,748
November 2003	24,917	13,593	20,136	58,646	25,053	13,459	20,196	58,708
December 2003	24,883	12,896	19,415	57,195	24,981	13,184	20,137	58,301
January 2004	25,505	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	26,015	13,466	20,769	60,250	25,772	13,345	20,254	59,371
May 2004	26,003	13,776	20,972	60,750	26,138	13,481	20,530	60,149
June 2004	26,063	13,518	20,779	60,359	26,453	13,420	20,633	60,506

Table 10

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	2004	% Change from 2002	2003
	$ millions									
Total										
Newfoundland and Labrador	328	272	207	199	337	245	9.8	1,356	12.5	2,827
Prince Edward Island	138	153	101	111	150	134	8.3	692	2.2	1,356
Nova Scotia	816	806	744	765	710	724	5.8	4,420	2.7	8,524
New Brunswick	1,361	1,352	1,120	1,108	1,174	1,077	6.9	6,775	2.7	12,864
Quebec	12,206	11,844	11,407	12,053	10,707	11,015	6.8	67,763	-1.3	128,514
Ontario	28,548	27,029	26,402	27,851	24,758	25,661	4.1	155,486	-1.7	289,216
Manitoba	1,109	1,098	1,019	1,107	946	985	9.1	6,178	1.3	11,413
Saskatchewan	830	841	796	904	682	708	17.9	4,752	3.7	7,913
Alberta	4,479	4,262	4,160	4,473	3,744	3,844	9.5	24,876	5.0	45,838
British Columbia	3,757	3,683	3,481	3,603	3,173	3,164	10.9	20,377	-3.3	37,223
311 Food manufacturing										
Newfoundland and Labrador	151	112	52	55	156	104	5.8	474	-9.3	1,056
Prince Edward Island	79	94	68	73	98	87	3.7	437	-1.0	902
Nova Scotia	171	163	162	163	157	159	2.5	950	-0.7	1,999
New Brunswick	280	216	124	135	287	183	9.7	992	0.6	2,035
Quebec	1,423	1,452	1,306	1,343	1,324	1,323	8.5	7,965	5.2	15,170
Ontario	2,290	2,281	2,164	2,188	2,059	2,154	6.6	12,924	1.9	25,005
Manitoba	238	236	225	232	201	204	13.6	1,348	1.0	2,457
Saskatchewan	179	173	185	205	157	168	11.3	1,064	4.0	1,947
Alberta	807	806	754	793	557	685	13.7	4,549	-3.5	7,976
British Columbia	446	432	390	407	444	432	0.5	2,380	3.5	4,890
312 Beverage and tobacco product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	358	325	280	315	396	358	-3.7	1,782	9.4	3,965
Ontario	542	525	446	448	480	465	4.6	2,629	0.6	5,316
Saskatchewan	4	3	3	3	3	3	11.5	17	-48.8	33
British Columbia	113	101	97	92	105	102	4.5	539	0.4	1,091
313 Textile mills										
Quebec	173	176	163	169	183	188	-8.7	979	-13.6	2,046
Ontario	94	89	88	97	85	91	2.3	539	-10.0	1,028
314 Textile product mills										
Quebec	69	75	71	70	80	79	-10.0	415	-11.0	912
Ontario	94	91	91	87	95	107	-6.7	519	-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	296	315	352	370	305	330	-6.2	1,986	-7.0	4,247
Ontario	139	146	152	155	141	164	-6.4	869	-6.1	1,923
Manitoba	21	21	21	22	17	20	13.2	127	-5.0	264
Saskatchewan	2	2	2	2	2	2	-3.0	13	7.6	28
Alberta	8	9	12	11	11	12	-5.3	62	-1.2	139
British Columbia	x	x	x	x	x	x	x	x	0.0	x
316 Leather and allied product manufacturing										
Quebec	24	22	22	23	24	26	-5.9	139	-9.4	390
Ontario	7	10	11	16	15	17	-27.1	74	-15.5	239
321 Wood product manufacturing										
Nova Scotia	71	59	46	51	48	52	16.1	303	-1.8	544
Quebec	958	972	914	861	752	790	13.6	5,027	-0.9	8,848
Ontario	623	626	579	552	535	544	8.7	3,211	-2.0	6,058
Manitoba	74	74	73	74	59	56	31.6	408	4.5	697
Saskatchewan	56	68	60	56	35	34	69.2	323	14.6	468
Alberta	345	357	352	336	236	217	49.2	1,897	11.3	2,932
British Columbia	1,166	1,133	1,067	1,099	835	821	24.2	6,158	-12.0	9,913
322 Paper manufacturing										
Nova Scotia	82	85	77	74	74	77	5.9	465	1.3	875
Quebec	877	882	856	908	864	921	-5.7	5,130	-8.4	10,620
Ontario	929	872	861	933	887	928	-6.3	5,223	-1.9	10,825
Alberta	156	152	147	161	143	145	-3.5	883	1.4	1,788
British Columbia	512	552	471	526	460	486	3.7	2,962	2.8	5,652

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	2004	% Change from 2002	2003
323 Printing and related support activities										
Quebec	233	237	233	248	207	238	1.4	1,387	-3.7	2,758
Ontario	542	541	546	611	530	534	-0.2	3,209	0.4	6,423
Manitoba	47	45	41	47	44	48	2.2	253	-1.2	510
Saskatchewan	12	12	10	14	11	11	1.1	69	5.4	147
Alberta	56	56	59	59	53	58	-1.8	327	-5.6	662
British Columbia	63	59	63	67	58	58	1.0	360	-8.5	758
324 Petroleum and coal products manufacturing										
Quebec	784	748	682	741	561	571	9.1	4,398	12.2	8,007
Ontario	1,272	1,211	1,079	1,093	880	915	14.2	6,749	6.8	11,670
Alberta	802	742	691	777	667	675	4.3	4,376	10.2	8,200
British Columbia	x	x	x	x	x	x	x	x	0.0	x
325 Chemical manufacturing										
Quebec	831	915	787	771	772	867	4.0	4,585	0.0	8,556
Ontario	2,091	1,975	1,972	2,106	1,843	1,851	5.6	11,631	3.1	21,357
Manitoba	65	82	62	81	71	84	-0.8	419	28.2	814
Saskatchewan	109	159	129	108	103	142	19.5	665	16.5	799
Alberta	684	774	749	790	659	800	0.3	4,378	5.5	8,285
British Columbia	123	120	110	94	97	104	9.3	605	6.6	1,084
326 Plastics and rubber products manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	599	574	547	585	508	539	6.6	3,209	5.8	6,038
Ontario	1,418	1,342	1,330	1,370	1,279	1,326	1.6	7,735	-0.9	14,790
Manitoba	60	53	52	50	48	54	5.3	297	5.7	568
Saskatchewan	10	11	12	11	9	10	3.4	58	3.5	107
Alberta	83	75	72	77	77	72	7.1	424	0.9	836
British Columbia	104	96	99	98	113	107	-3.2	557	9.6	1,156
327 Non-metallic mineral product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	318	293	233	206	276	281	10.6	1,333	4.3	2,679
Ontario	567	522	475	427	524	499	5.4	2,642	5.6	5,560
Saskatchewan	9	7	5	4	9	9	0.6	28	-7.7	71
Alberta	159	135	122	109	143	125	2.5	706	-0.7	1,556
British Columbia	145	129	134	131	127	124	10.1	742	11.6	1,416
331 Primary metal manufacturing										
Quebec	1,546	1,538	1,532	1,638	1,167	1,152	24.0	8,910	3.1	14,769
Ontario	1,804	1,670	1,680	1,781	1,266	1,490	10.4	9,783	-2.9	16,907
Alberta	157	147	138	193	133	160	4.5	955	41.3	1,812
332 Fabricated metal product manufacturing										
Newfoundland and Labrador	20	17	20	14	14	14	55.2	99	49.4	153
Prince Edward Island	1	2	2	3	1	1	-5.3	12	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	618	608	583	607	547	560	7.9	3,359	0.5	6,597
Ontario	1,728	1,627	1,584	1,662	1,467	1,526	5.8	9,267	-3.9	17,460
Manitoba	67	61	60	60	56	50	14.7	343	6.0	620
Saskatchewan	44	40	35	36	34	34	11.4	211	4.9	389
Alberta	351	315	286	334	316	254	13.6	1,818	22.7	3,410
British Columbia	175	173	167	167	150	145	12.0	940	0.4	1,721
333 Machinery manufacturing										
Quebec	507	434	381	433	398	389	4.3	2,482	-3.7	4,920
Ontario	1,310	1,194	1,185	1,219	1,156	1,242	0.3	6,979	-6.8	13,688
Manitoba	92	82	76	84	69	68	13.7	471	-9.0	802
Saskatchewan	49	51	69	71	42	50	5.0	345	-10.7	611
Alberta	349	281	353	355	276	254	22.0	1,918	13.0	3,308
British Columbia	173	166	153	184	151	154	8.5	974	9.1	1,837
334 Computer and electronic product manufacturing										
Quebec	550	480	425	672	547	452	5.6	3,025	-17.3	5,856
Ontario	1,002	911	800	1,071	807	765	15.3	5,299	-7.6	9,773
Saskatchewan	x	x	x	x	x	x	x	x	0.0	x
Alberta	191	107	129	176	151	86	15.2	822	-31.8	1,520
British Columbia	108	96	98	108	85	86	20.7	587	-10.0	1,101

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	June 2004	May 2004	Apr. 2004	Mar. 2004	June 2003	May 2003	% Change from 2003	2004	% Change from 2002	2003
335 Electrical equipment, appliance and component manufacturing										
Quebec	358	321	306	321	301	283	9.2	1,826	-1.3	3,405
Ontario	512	476	487	541	486	472	4.3	2,893	-7.9	5,458
Manitoba	12	11	12	14	13	14	-13.2	73	-22.0	166
Saskatchewan	15	15	13	15	13	12	17.9	81	-31.9	145
Alberta	32	29	37	39	28	26	27.7	200	9.7	356
British Columbia	x	x	x	x	x	x	x	x	0.0	x
336 Transportation equipment manufacturing										
Nova Scotia	67	73	70	65	61	63	7.8	387	-10.6	707
Quebec	1,146	941	1,224	1,199	1,016	1,150	4.8	6,717	-7.1	12,570
Ontario	10,544	9,917	9,909	10,439	9,246	9,631	2.3	57,491	-3.3	103,510
Manitoba	167	176	151	168	144	155	-0.5	916	3.6	1,697
Saskatchewan	26	24	23	23	18	25	5.0	135	-11.5	240
Alberta	64	60	64	67	71	64	-4.9	387	9.0	780
British Columbia	97	101	94	100	88	90	6.8	560	-36.7	991
337 Furniture and related product manufacturing										
Quebec	342	329	333	353	319	353	-0.6	1,971	-5.6	3,940
Ontario	678	648	637	699	660	631	3.3	3,918	6.2	7,627
Manitoba	48	46	45	47	46	45	-0.4	269	-1.0	544
Saskatchewan	6	6	6	6	6	6	0.4	34	8.7	68
Alberta	73	70	73	76	73	74	-3.1	419	-10.5	851
British Columbia	76	71	75	73	66	66	4.9	414	5.6	799
339 Miscellaneous manufacturing										
Newfoundland and Labrador	x	x	x	x	x	x	x	x	0.0	x
Quebec	198	207	177	218	160	165	20.2	1,139	-1.1	2,221
Ontario	362	356	326	354	318	310	1.3	1,902	2.6	3,560
Manitoba	19	17	16	22	12	14	26.8	101	-2.1	175
Saskatchewan	6	5	5	5	5	5	7.0	28	13.6	55
Alberta	67	57	46	41	63	52	13.3	289	44.3	534
British Columbia	62	55	75	63	51	48	23.7	353	1.7	651

About the Monthly Survey of Manufacturing

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

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

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

Concepts and definitions

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

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

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

1. Shipments

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

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

2. Inventories

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

3. Orders

a) Unfilled orders

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

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

b) New orders

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

4. Non-durable / durable goods

a) Non-durable goods industries

Non-durable goods industries include Food (NAICS 311), Beverage and Tobacco Products (312), Textile Mills (313), Textile Product Mills (314), Clothing (315), Leather and Allied Products (316), Paper (322), Printing and Related Support Activities (323), Petroleum and Coal Products (324), Chemicals (325) and Plastic and Rubber Products (326).

b) Durable goods industries

Durable goods industries include Wood Products (NAICS 321), Non-Metallic Mineral Products (327), Primary Metals (331), Fabricated Metal Products (332), Machinery (333), Computer and Electronic Products (334), Electrical Equipment, Appliance and Components (335), Transportation Equipment (336), Furniture and Related Products (337) and Miscellaneous Manufacturing (339).

Survey design and methodology

Beginning with the August 1999 reference month, the Monthly Survey of Manufacturing (MSM) has undergone an extensive redesign.

Concept review

It was decided that before any redesign work could begin the basic concepts and definitions of the program would be confirmed.

This was done in two ways: First, a review of user requirements was initiated. This involved revisiting an internal report to ensure that the user requirements from that exercise were being satisfied. As well, another round of internal review with the major users in the National Accounts was undertaken. This was to specifically focus on any data gaps that could be identified.

Secondly, with these gaps or requirements in hand, a survey was conducted in order to ascertain respondent's ability to report existing and new data. The study was also to confirm that respondents understood the definitions, which were being asked by survey analysts.

The result of the concept review was a reduction of the number of questions for the survey from sixteen to seven. Most of the questions that were dropped had to do with the reporting of shipments for work that was partially completed.

Methodology

The new sample design incorporates the 1997 North American Industrial Classification Standard (NAICS) and gives a much higher profile to provincial estimates. Stratification is done by province with equal quality requirements for each province. Large size units are selected with certainty and small units are selected with a probability based on the desired quality of the estimate within a cell.

The opportunity was also taken at this time to allow for the introduction of sample rotation into the survey design. Most of the smaller companies who are asked to participate in the survey will do so only for a set period.

The estimation system generates estimates using the NAICS. The estimates will also continue to be reconciled to the ASM. Provincial estimates for all variables will be produced. A measure of quality (CV) will also be produced.

Components of the redesigned survey

Target population and sampling frame

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

The sample

The MSM sample is a probability sample comprised of approximately 11,000 establishments.

Prior to selection, the sampling frame is subdivided into industry-province cells. For the most part, NAICS codes were used. Depending upon the number of establishments within each cell, further subdivisions were made to group similar sized establishments' together (called stratum). An establishment's size was based on its most recently available annual shipments or sales value.

Each industry by province cell has a 'take-all' stratum composed of establishments sampled each month with certainty. This 'take-all' stratum is composed of establishments that are the largest statistical enterprises, and have the largest impact on estimates within a particular industry by province cell. These large statistical enterprises comprise 45% of the national manufacturing shipment estimates.

Each industry - province cell can have at most three 'take-some' strata. Not all establishments within these stratums need to be sampled with certainty. A random sample is drawn from the remaining strata. The responses from these sampled establishments are weighted according to the inverse of their probability of selection.

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

Data collection

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
	%				
June 2003	0.55	0.94	0.81	1.33	2.23
July 2003	0.62	0.97	0.85	1.42	2.23
August 2003	0.53	0.98	0.85	1.36	2.24
September 2003	0.57	0.99	0.91	1.42	2.07
October 2003	0.57	1.01	1.00	1.39	2.08
November 2003	0.59	1.03	0.98	1.31	2.04
December 2003	0.58	1.06	1.06	1.35	2.00
January 2004	0.57	1.08	1.04	1.36	1.89
February 2004	0.55	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

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	90.58	6.40	3.02
Raw Materials	79.77	16.68	3.55
Goods in Process	63.74	10.09	26.16
Finished Products	79.50	13.26	7.24
Unfilled Orders	76.66	7.72	15.61

Joint Interpretation of Measures of Error

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

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

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

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

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

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

Trend

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