Catalogue no. 31-001-XIE

Monthly Survey of Manufacturing

April 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

- Canadian manufacturing continued to pick up steam in April. Shipments rose 0.5% to $48.5 billion, extending the string of consecutive gains to five months, the longest since the late 1990s. In addition, robust demand from abroad boosted manufacturers' backlog of unfilled orders. Unfilled orders for April are up a solid 6.6% since the close of 2003.

Analysis – April 2004

Canadian manufacturing continued to pick up steam in April. Shipments rose 0.5% to $48.5 billion, extending the string of consecutive gains to five months, the longest since the late 1990s. In addition, robust demand from abroad boosted manufacturers' backlog of unfilled orders. Unfilled orders for April are up a solid 6.6% since the close of 2003.

Despite concerns that Canada's strengthened dollar and the recent boom in petroleum prices would undermine the manufacturing sector, manufacturers have put in a stellar performance during the first four months of 2004. Year-to-date shipments were up 3.1% compared with the same period in 2003, with much of the strength coming from the big-ticket, durable goods sector.

Manufacturers of durable goods setting the pace in 2004

Shipments of durable goods increased 1.1% to $27.8 billion in April, the third consecutive rise. Recent gains in aerospace and computer manufacturing, coupled with strong demand and soaring prices for wood products and primary metals, contributed to a healthy 4.7% jump in year-to-date shipments of durable goods industries. April shipments of non-durable goods slipped 0.2% to $20.6 billion, following five consecutive monthly gains.

Text Table 1

Shipments by province and territory

	March 2004	April 2004	March 2004 to April 2004
	seasonally adjusted		
	$ millions		% change
Canada	**48,213**	**48,471**	**0.5**
Newfoundland and Labrador	242	247	1.8
Prince Edward Island	129	123	-4.7
Nova Scotia	761	778	2.2
New Brunswick	1,165	1,179	1.1
Quebec	11,398	11,562	1.4
Ontario	24,994	25,154	0.6
Manitoba	1,041	982	-5.7
Saskatchewan	799	737	-7.8
Alberta	4,256	4,312	1.3
British Columbia	3,420	3,389	-0.9
Yukon Territory	1	1	-2.8
Northwest Territories including Nunavut	5	8	47.3

Two-thirds of the 21 manufacturing industries, representing 82% of total shipments, posted increases in April. Quebec led the six provinces and territories reporting higher shipments. Quebec's shipments rose 1.4% (+$164 million) to $11.6 billion, the fifth increase in a row. Resource-based industries were the main contributors, especially wood products and primary metals.

Ontario and Alberta also stepped up production in April. Led by transportation equipment and machinery manufacturing, shipments in Ontario grew $160 million (+0.6%) to $25.2 billion, following a huge gain in March (+3.8%). Alberta manufacturers posted their ninth consecutive rise in shipments, $56 million (+1.3%) to $4.3 billion. Machinery and petroleum shipments have been on a steady upswing in recent months.

On the jobs front, manufacturing employment edged up 12,000 in May, following a slight increase in April (+3,600), continuing a period of little change that began during the fall of 2003, according to the latest Labour Force Survey.

Shipments of wood products hit a record high

Continued strong demand in the construction sector and soaring prices were the forces behind record high shipments of wood products in April. Leading all industries, shipments of wood products hit $3.1 billion, up 4.3%. Lumber prices increased 2.3% for the month, and have jumped 14% in the first four months of the year. The number of building permits issued in Canada and the United States continued to rise in April, promising another busy summer of construction.

Aerospace manufacturers chalked up their fourth increase in production in the last five months, a positive sign for the beleaguered industry. Production of aerospace products and parts rose 7.6% to $1.2 billion, the highest level since September 2001.

A recent run-up in petroleum prices and strengthened demand for automobiles in the United States contributed to higher shipments of petroleum and coal products (+1.8%) and motor vehicles (+1.0%), rounding out the top four industries that posted increases in April.

Chart 1

Manufacturers continue to post strong shipments

Big jump in raw material inventories

Manufacturers expressed further confidence in the economy, as many bolstered their inventories of raw materials in April. A steady stream of new orders in recent months contributed to a 1.4% rise in raw material inventories to $25.8 billion, as many manufacturers readied their factories for future production. Raw material inventories stood at their highest level since last summer.

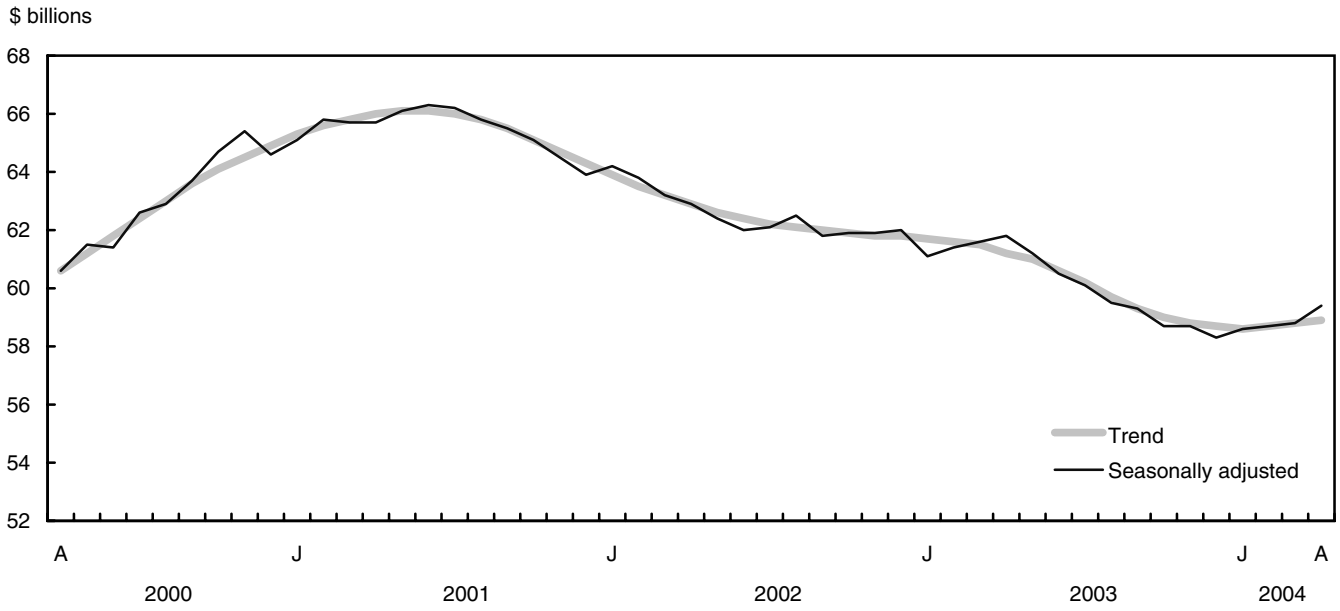
Goods-in-process and finished-product inventories also increased in April. Goods-in-process inventories totalled $13.3 billion, up 0.9%. Finished products recouped from March's decline (-0.5%), rising 0.6%

to $20.3 billion. The trend for finished-product inventories has been improving in recent months, following an extended period of inventory reduction.

Led by increases in the fabricated metal products (+3.6%), motor vehicles (+8.5%) and petroleum and coal products (+3.3%) industries, total inventories expanded 1.0% to $59.4 billion in April, the fourth straight rise.

Chart 2

Big gains in raw materials boost total inventories



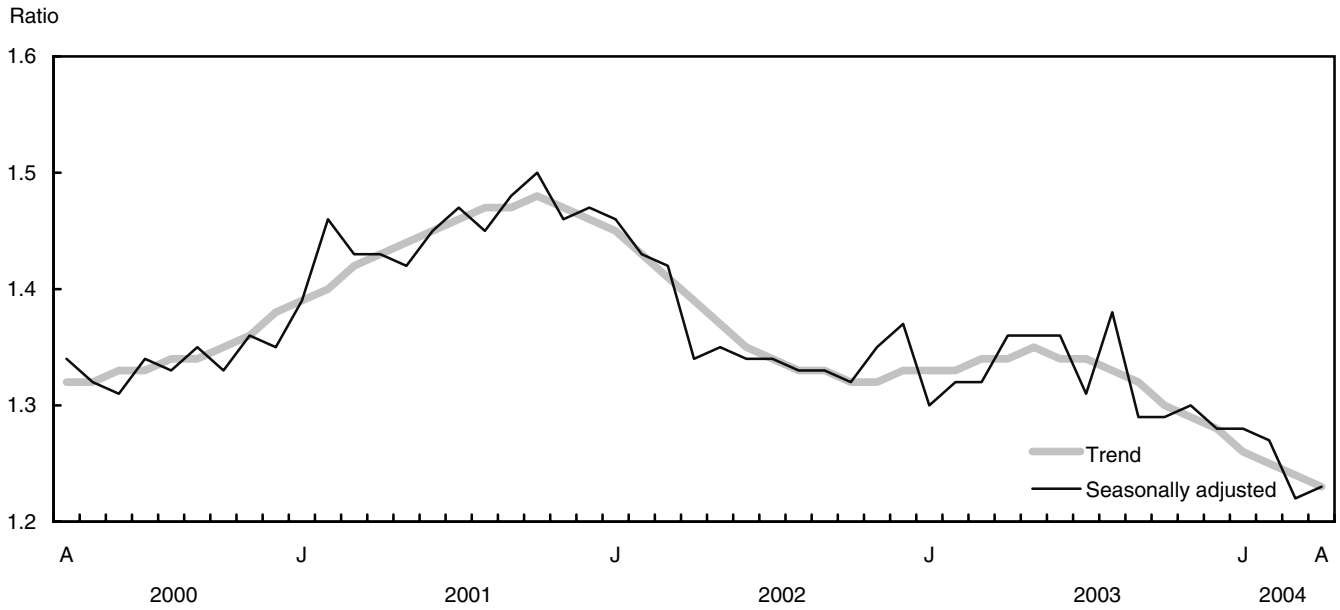
Manufacturers keep the inventory-to-shipment ratio in check

In April, the inventory-to-shipment ratio rose marginally to 1.23 from March's 1.22. March's level was the lowest on record since the start of the current series in 1992. The recent gain in shipments coupled with a slower build-up of inventories has contributed to the improvement of the inventory-to-shipment ratio in 2004.

Shipments and finished-product inventories increased at about the same pace in April, contributing to a stable finished-product inventory-to-shipment ratio of 0.42. The ratio is a key measure of the time, in months, that would be required to exhaust inventories if shipments were to remain at their current level.

Chart 3

The inventory-to-shipments ratio remains near record lows



New orders continue to flow

Several contract signings in April contributed to the fifth successive rise in new orders. Manufacturers continued to fill their books: New orders jumped 2.4% to $49.4 billion, following March's 3.2% advance. Strong demand at home and from abroad have contributed to a positive trend for new orders since August 2003.

The aerospace and fabricated metal products industries reported sizable gains in April of 140.5% and 8.2%, respectively.

Manufacturers' backlog of unfilled orders improves

A good sign of shipments to come, manufacturers reported a 2.6% increase in unfilled orders to $37.3 billion. This is the fourth increase in a row and the longest string of consecutive increases since 1999.

Unfilled orders, which had been in a steady decline since the high tech crash and the general slowdown of the global economy in 2001, have shown a modest recovery in 2004. In December, orders bottomed out at just over $35 billion. Manufacturers have since added $2.3 billion to their books in the first four months of the year.

Wide-ranging increases in unfilled orders were reported in April, led by fabricated metal products (+9.6%), machinery (+3.1%) and aerospace products and parts (+1.0%).

Chart 4

Rising unfilled orders a good sign

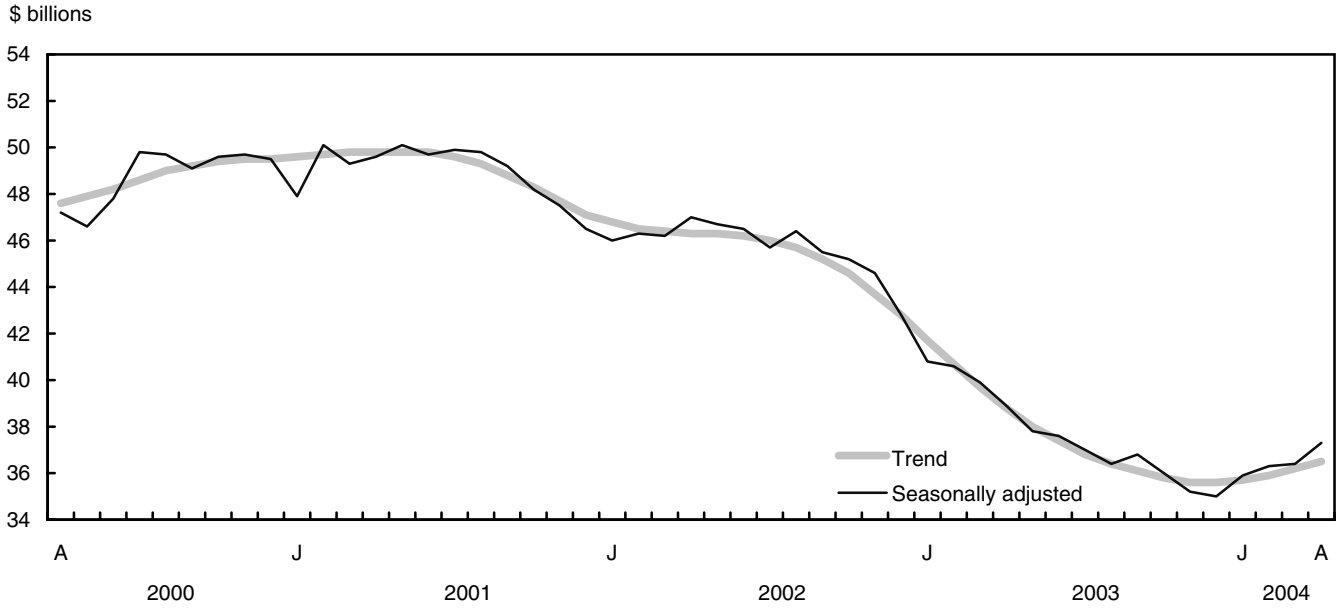


Chart 5

Inventories - Monthly change in trend

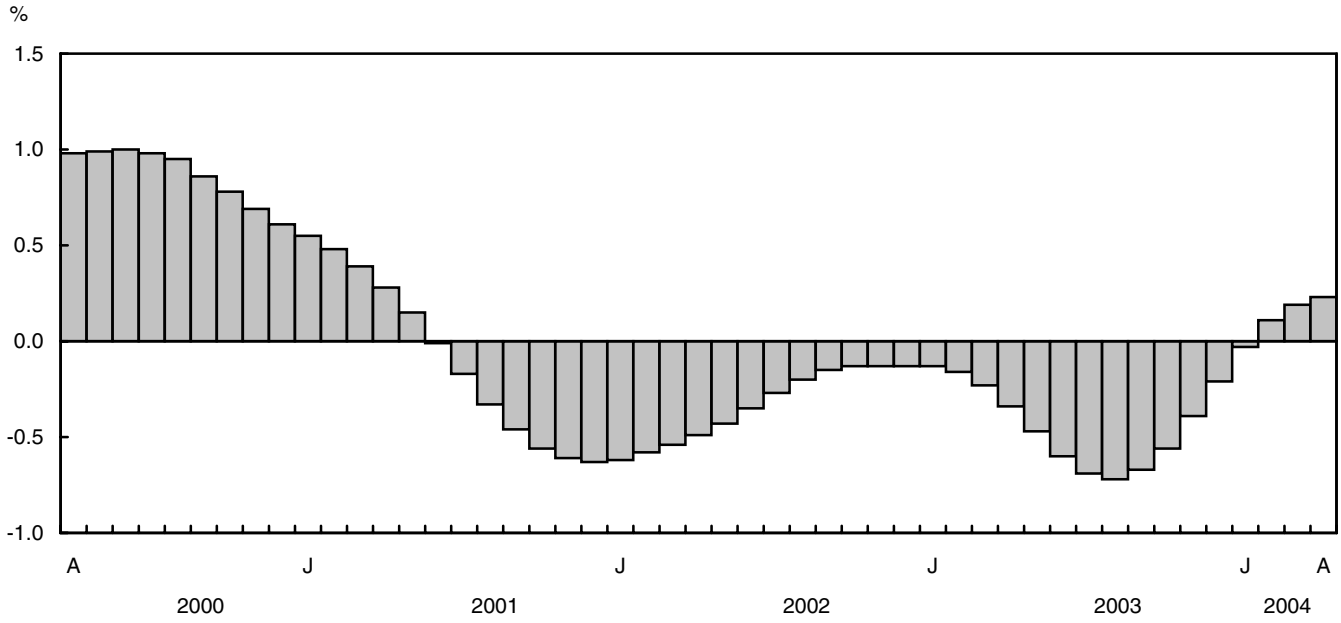


Chart 6

Shipments - Monthly change in trend

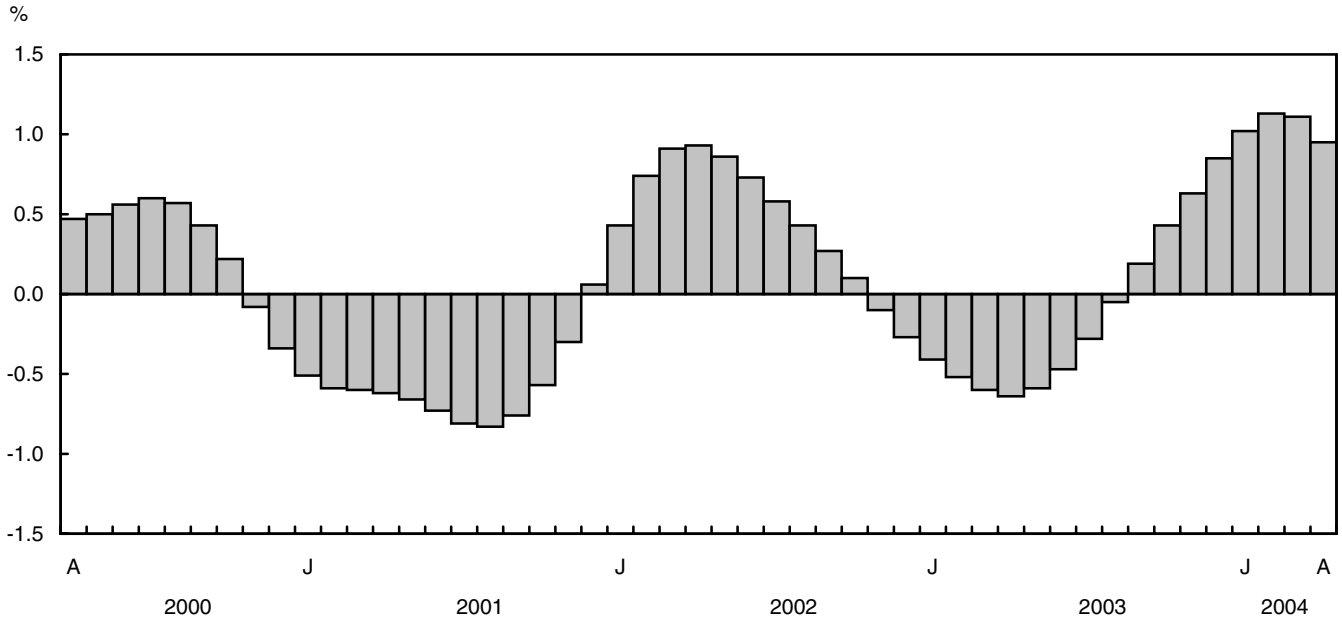
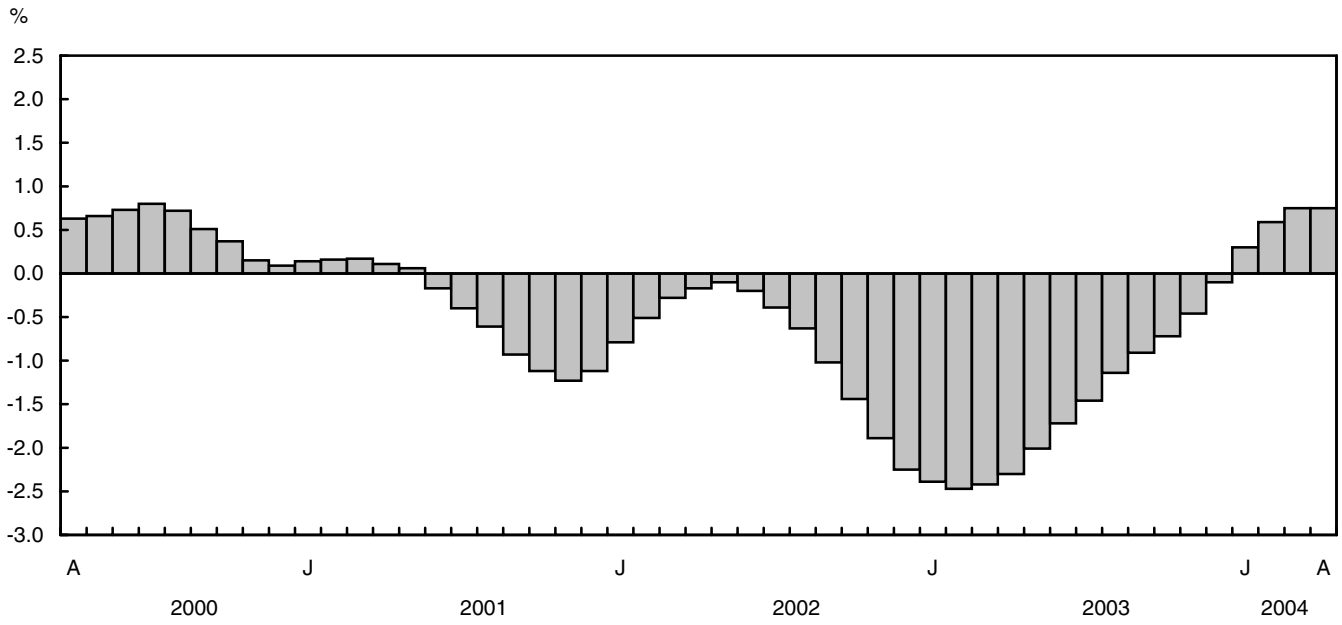


Chart 7

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. The month-to-month change in new orders may be volatile, particularly if the previous month's change in unfilled orders is closely related to the current month's change.

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

Related products

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							
April 2003	45,978	62,694	38,560	44,795	45,287	61,789	38,866	44,300
May 2003	47,564	61,680	38,025	47,029	44,879	61,243	37,811	43,824
June 2003	46,387	60,282	37,581	45,943	44,569	60,481	37,576	44,335
July 2003	41,706	59,485	37,357	41,482	45,735	60,129	37,020	45,179
August 2003	43,610	59,420	36,817	43,069	43,290	59,541	36,433	42,702
September 2003	47,961	58,801	37,228	48,372	45,818	59,307	36,838	46,223
October 2003	48,508	58,200	36,005	47,286	45,373	58,748	35,984	44,519
November 2003	44,983	58,646	35,049	44,027	44,993	58,708	35,204	44,213
December 2003	42,991	57,195	34,653	42,595	45,678	58,301	35,020	45,493
January 2004	42,408	58,233	35,548	43,303	45,801	58,572	35,931	46,712
February 2004	43,770	59,815	36,246	44,468	46,360	58,700	36,328	46,757
March 2004	52,155	60,150	36,295	52,204	48,213	58,834	36,373	48,258
April 2004	49,385	60,561	37,189	50,279	48,471	59,424	37,329	49,427

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
April 2003	-3.3	-0.6	0.3	-0.3	1.36	1.34	-2.5	-2.3	-4.0	-0.5
May 2003	-0.9	-0.6	-0.9	-0.5	1.36	1.35	-2.7	-2.0	-1.1	-0.3
June 2003	-0.7	-0.5	-1.2	-0.6	1.36	1.34	-0.6	-1.7	1.2	-0.2
July 2003	2.6	-0.3	-0.6	-0.7	1.31	1.34	-1.5	-1.5	1.9	0.0
August 2003	-5.3	0.0	-1.0	-0.7	1.38	1.33	-1.6	-1.1	-5.5	0.2
September 2003	5.8	0.2	-0.4	-0.7	1.29	1.32	1.1	-0.9	8.2	0.4
October 2003	-1.0	0.4	-0.9	-0.6	1.29	1.30	-2.3	-0.7	-3.7	0.6
November 2003	-0.8	0.6	-0.1	-0.4	1.30	1.29	-2.2	-0.5	-0.7	0.8
December 2003	1.5	0.8	-0.7	-0.2	1.28	1.28	-0.5	-0.1	2.9	1.1
January 2004	0.3	1.0	0.5	0.0	1.28	1.26	2.6	0.3	2.7	1.3
February 2004	1.2	1.1	0.2	0.1	1.27	1.25	1.1	0.6	0.1	1.4
March 2004	4.0	1.1	0.2	0.2	1.22	1.24	0.1	0.7	3.2	1.2
April 2004	0.5	1.0	1.0	0.2	1.23	1.23	2.6	0.8	2.4	1.0

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							
April 2003	9,175	3,236	1,576	9,085	8,527	3,223	1,645	8,493
May 2003	9,387	3,223	1,554	9,365	8,498	3,189	1,587	8,440
June 2003	9,004	3,079	1,548	8,998	8,306	3,143	1,592	8,311
July 2003	5,724	3,055	1,561	5,737	8,911	3,144	1,575	8,894
August 2003	7,339	3,005	1,617	7,395	7,307	3,033	1,614	7,346
September 2003	8,696	3,167	1,649	8,728	8,337	3,164	1,624	8,347
October 2003	9,022	3,082	1,710	9,083	8,286	3,110	1,680	8,342
November 2003	8,116	3,166	1,771	8,177	7,980	3,093	1,730	8,030
December 2003	7,139	3,001	1,797	7,165	8,233	3,067	1,765	8,267
January 2004	7,785	3,091	1,821	7,810	8,221	3,065	1,801	8,258
February 2004	8,330	3,276	1,872	8,381	8,113	3,214	1,864	8,175
March 2004	10,211	3,442	1,970	10,308	8,646	3,371	1,983	8,766
April 2004	9,557	3,571	2,036	9,623	8,729	3,514	2,100	8,846

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
April 2003	-4.3	-0.9	1.8	0.0	0.38	0.37	-2.1	-1.8	-4.4	-0.8
May 2003	-0.4	-0.9	-1.1	-0.2	0.38	0.37	-3.5	-1.4	-0.6	-0.9
June 2003	-2.2	-1.0	-1.5	-0.3	0.38	0.37	0.3	-0.8	-1.5	-0.8
July 2003	7.3	-0.9	0.1	-0.4	0.35	0.38	-1.1	-0.1	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	-0.2	0.38	0.38	0.7	1.4	13.6	-0.4
October 2003	-0.6	-0.2	-1.7	0.1	0.38	0.38	3.5	2.1	-0.1	-0.1
November 2003	-3.7	0.0	-0.5	0.5	0.39	0.38	3.0	2.7	-3.7	0.1
December 2003	3.2	0.3	-0.8	1.0	0.37	0.38	2.0	3.3	3.0	0.4
January 2004	-0.1	0.6	-0.1	1.4	0.37	0.39	2.1	3.7	-0.1	0.7
February 2004	-1.3	1.0	4.9	1.8	0.40	0.39	3.5	3.7	-1.0	1.0
March 2004	6.6	1.2	4.9	1.9	0.39	0.39	6.4	3.4	7.2	1.2
April 2004	1.0	1.2	4.2	1.9	0.40	0.40	5.9	2.8	0.9	1.1

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							
April 2003	36,803	59,458	36,984	35,710	36,760	58,565	37,221	35,808
May 2003	38,176	58,457	36,472	37,664	36,382	58,053	36,223	35,383
June 2003	37,383	57,203	36,034	36,945	36,263	57,338	35,984	36,024
July 2003	35,982	56,430	35,796	35,745	36,823	56,984	35,446	36,285
August 2003	36,271	56,416	35,199	35,674	35,982	56,508	34,819	35,356
September 2003	39,265	55,633	35,579	39,644	37,482	56,143	35,213	37,876
October 2003	39,487	55,118	34,295	38,203	37,087	55,638	34,303	36,177
November 2003	36,867	55,480	33,278	35,850	37,013	55,615	33,474	36,183
December 2003	35,852	54,194	32,856	35,430	37,445	55,234	33,255	37,226
January 2004	34,622	55,142	33,726	35,493	37,579	55,507	34,130	38,454
February 2004	35,441	56,539	34,374	36,088	38,248	55,485	34,465	38,582
March 2004	41,944	56,707	34,325	41,896	39,567	55,463	34,390	39,493
April 2004	39,828	56,991	35,153	40,655	39,742	55,911	35,229	40,581

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
April 2003	-3.1	-0.6	0.2	-0.4	1.59	1.57	-2.5	-2.3	-3.9	-0.4
May 2003	-1.0	-0.5	-0.9	-0.5	1.60	1.57	-2.7	-2.0	-1.2	-0.2
June 2003	-0.3	-0.4	-1.2	-0.6	1.58	1.57	-0.7	-1.8	1.8	-0.1
July 2003	1.5	-0.1	-0.6	-0.7	1.55	1.56	-1.5	-1.5	0.7	0.1
August 2003	-2.3	0.1	-0.8	-0.7	1.57	1.54	-1.8	-1.2	-2.6	0.4
September 2003	4.2	0.3	-0.6	-0.7	1.50	1.53	1.1	-1.0	7.1	0.6
October 2003	-1.1	0.6	-0.9	-0.6	1.50	1.51	-2.6	-0.9	-4.5	0.8
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	-0.3	1.48	1.47	-0.7	-0.3	2.9	1.3
January 2004	0.4	1.1	0.5	-0.1	1.48	1.46	2.6	0.1	3.3	1.5
February 2004	1.8	1.2	0.0	0.0	1.45	1.44	1.0	0.4	0.3	1.4
March 2004	3.5	1.1	0.0	0.1	1.40	1.42	-0.2	0.6	2.4	1.2
April 2004	0.4	0.9	0.8	0.1	1.41	1.41	2.4	0.6	2.8	0.9

Table 4-1

Shipments by major group and selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% change from 2003	2004	% change from 2002	2003
		$millions									
Food manufacturing	311	5,450	5,591	5,015	5,019	5,134	5,137	6.8	21,075	1.7	63,436
Beverage and tobacco product manufacturing	312	960	987	784	735	952	955	1.1	3,466	3.2	12,032
Textile mills	313	286	300	261	253	303	317	-6.0	1,100	-11.0	3,421
Textile product mills	314	190	188	166	170	198	199	-6.6	714	-10.3	2,297
Clothing manufacturing	315	578	623	566	518	600	628	-4.0	2,286	-6.3	7,075
Leather and allied product manufacturing	316	45	54	48	45	51	57	-8.7	193	-13.7	743
Wood product manufacturing	321	3,257	3,194	2,601	2,273	2,593	2,547	14.8	11,325	-3.4	31,248
Paper manufacturing	322	2,705	2,923	2,567	2,546	2,907	2,982	-5.6	10,741	-3.6	33,204
Printing and related support activities	323	994	1,075	897	852	996	1,046	-0.7	3,818	-0.7	11,590
Petroleum and coal products manufacturing	324	3,300	3,472	3,208	3,172	2,899	3,746	-1.4	13,152	9.0	37,355
Chemical manufacturing	325	3,843	3,969	3,326	3,301	3,553	3,691	3.1	14,439	3.6	41,187
Plastics and rubber products manufacturing	326	2,226	2,299	1,930	1,807	2,187	2,108	1.0	8,262	1.0	24,722
Non-metallic mineral product manufacturing	327	1,007	907	728	656	944	818	4.8	3,299	5.3	11,994
Primary metal manufacturing	331	3,749	4,091	3,311	3,267	3,146	3,323	11.6	14,418	2.3	37,606
Fabricated metal product manufacturing	332	2,775	2,941	2,424	2,245	2,561	2,577	5.2	10,384	0.4	31,026
Machinery manufacturing	333	2,252	2,400	1,993	1,982	2,105	2,313	2.3	8,627	-2.9	25,576
Computer and electronic product manufacturing	334	1,504	2,072	1,538	1,369	1,352	1,694	10.4	6,482	-13.1	18,790
Electrical equipment, appliance and component manufacturing	335	878	964	820	756	815	889	4.7	3,418	-5.7	9,984
Transportation equipment manufacturing	336	11,545	12,112	9,920	9,776	10,905	11,418	0.2	43,352	-3.9	120,949
Motor vehicle manufacturing	3361	6,579	7,031	5,609	5,259	6,505	6,734	-3.5	24,477	-6.4	69,258
Motor vehicle body and trailer manufacturing	3362	331	330	280	284	336	355	-4.5	1,224	0.1	3,695
Motor vehicle parts manufacturing	3363	2,978	3,180	2,721	2,527	2,670	2,859	4.6	11,405	-0.1	31,433
Aerospace product and parts manufacturing	3364	1,216	1,102	871	1,241	994	972	13.1	4,431	1.5	11,586
Railroad rolling stock manufacturing	3365	194	189	191	165	192	240	-18.2	739	-7.7	2,370
Ship and boat building	3366	121	111	103	89	99	114	12.4	424	-5.4	1,100
Furniture and related product manufacturing	337	1,176	1,262	1,093	1,145	1,171	1,209	1.2	4,676	1.2	14,035
Miscellaneous manufacturing	339	663	729	575	525	607	625	5.5	2,492	3.5	7,495
Non-durable goods industries [1]		**20,579**	**21,482**	**18,769**	**18,416**	**19,779**	**20,865**	**1.0**	**79,246**	**1.5**	**237,062**
Durable goods industries [2]		**28,806**	**30,673**	**25,002**	**23,992**	**26,199**	**27,413**	**4.7**	**108,472**	**-2.6**	**308,703**
Manufacturing		**49,385**	**52,155**	**43,770**	**42,408**	**45,978**	**48,277**	**3.1**	**187,718**	**-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 March	Current periods				Change from previous month			Trend change from previous month			
			Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004
		$ millions					percentage						
Food manufacturing	311	7	5,652	5,645	5,520	5,567	0.1	2.3	-0.8	0.5	0.7	0.8	1.0
Beverage and tobacco product manufacturing	312	-29	990	1,019	985	999	-2.9	3.5	-1.4	-0.2	-0.3	-0.3	-0.3
Textile mills	313	-1	276	278	271	275	-0.5	2.4	-1.4	-0.1	-0.1	-0.1	-0.2
Textile product mills	314	2	183	181	179	191	1.1	1.2	-6.4	-0.1	-0.1	-0.2	-0.3
Clothing manufacturing	315	5	574	569	561	595	0.9	1.4	-5.7	-0.1	-0.1	-0.2	-0.2
Leather and allied product manufacturing	316	-1	58	59	60	59	-1.6	-2.3	2.6	-1.0	-1.0	-0.7	-0.3
Wood product manufacturing	321	128	3,118	2,989	2,812	2,661	4.3	6.3	5.7	2.4	2.6	2.4	2.0
Paper manufacturing	322	-68	2,707	2,775	2,673	2,614	-2.5	3.8	2.3	0.4	0.5	0.4	0.1
Printing and related support activities	323	10	973	963	970	939	1.0	-0.7	3.2	0.3	0.3	0.4	0.4
Petroleum and coal products manufacturing	324	60	3,467	3,407	3,327	3,188	1.8	2.4	4.3	2.1	2.5	2.6	2.4
Chemical manufacturing	325	9	3,647	3,637	3,527	3,474	0.2	3.1	1.5	0.9	1.1	1.2	1.2
Plastics and rubber products manufacturing	326	-37	2,102	2,139	2,064	2,047	-1.7	3.7	0.8	0.1	0.2	0.3	0.3
Non-metallic mineral product manufacturing	327	3	1,057	1,054	1,034	983	0.3	1.9	5.2	0.8	1.0	1.1	1.0
Primary metal manufacturing	331	23	3,666	3,644	3,414	3,312	0.6	6.7	3.1	1.9	2.3	2.5	2.5
Fabricated metal product manufacturing	332	0	2,777	2,777	2,642	2,478	0.0	5.1	6.6	0.7	1.0	1.1	1.1
Machinery manufacturing	333	51	2,201	2,150	2,121	2,136	2.4	1.4	-0.7	0.5	0.4	0.2	0.1
Computer and electronic product manufacturing	334	-72	1,702	1,774	1,705	1,562	-4.1	4.0	9.2	0.6	1.0	1.5	1.8
Electrical equipment, appliance and component manufacturing	335	1	860	859	859	834	0.1	0.1	2.9	0.1	0.3	0.4	0.4
Transportation equipment manufacturing	336	168	10,606	10,438	9,866	10,041	1.6	5.8	-1.7	1.1	1.2	1.0	0.7
Motor vehicle manufacturing	3361	59	5,926	5,867	5,431	5,595	1.0	8.0	-2.9	1.4	1.3	1.0	0.5
Motor vehicle body and trailer manufacturing	3362	7	297	290	299	299	2.3	-3.1	0.0	-0.3	-0.3	-0.4	-0.4
Motor vehicle parts manufacturing	3363	24	2,803	2,779	2,681	2,627	0.9	3.6	2.1	0.8	1.0	1.0	0.9
Aerospace product and parts manufacturing	3364	82	1,160	1,078	1,015	1,041	7.6	6.3	-2.5	1.9	2.1	2.2	1.9
Railroad rolling stock manufacturing	3365	39	201	162	193	170	23.8	-15.7	13.7	1.9	1.4	1.2	1.3
Ship and boat building	3366	1	93	92	100	99	1.2	-8.1	0.9	-0.4	-0.3	0.2	0.8
Furniture and related product manufacturing	337	1	1,179	1,178	1,155	1,225	0.1	1.9	-5.7	0.1	0.2	0.3	0.4
Miscellaneous manufacturing	339	-1	677	678	615	620	-0.1	10.2	-0.8	1.3	1.3	1.3	1.1
Non-durable goods industries [1]		**-44**	**20,628**	**20,672**	**20,136**	**19,948**	**-0.2**	**2.7**	**0.9**	**0.7**	**0.9**	**1.0**	**0.9**
Durable goods industries [2]		**302**	**27,843**	**27,541**	**26,224**	**25,852**	**1.1**	**5.0**	**1.4**	**1.1**	**1.3**	**1.2**	**1.1**
Manufacturing		**258**	**48,471**	**48,213**	**46,360**	**45,801**	**0.5**	**4.0**	**1.2**	**1.0**	**1.1**	**1.1**	**1.0**

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	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% change from 2003	Average 2004	% change from 2002	2003
		$millions									
Food manufacturing	311	4,707	4,707	4,620	4,576	4,438	4,599	2.4	4,653	0.2	4,564
Beverage and tobacco product manufacturing	312	1,676	1,690	1,652	1,593	1,706	1,696	-1.7	1,653	2.7	1,650
Textile mills	313	475	471	469	473	536	538	-11.5	472	-8.0	519
Textile product mills	314	359	360	353	353	384	382	-4.8	356	-4.2	365
Clothing manufacturing	315	1,338	1,325	1,345	1,354	1,473	1,447	-7.4	1,341	0.9	1,451
Leather and allied product manufacturing	316	122	115	114	117	144	134	-14.4	117	-9.8	141
Wood product manufacturing	321	4,718	5,155	4,965	4,465	5,136	5,636	-7.8	4,826	-0.9	4,533
Paper manufacturing	322	3,593	3,543	3,536	3,486	3,681	3,657	-2.4	3,540	-1.1	3,588
Printing and related support activities	323	858	867	863	844	894	904	-1.1	858	-2.4	870
Petroleum and coal products manufacturing	324	2,294	2,217	2,085	1,997	2,116	2,027	4.8	2,148	0.8	2,009
Chemical manufacturing	325	6,263	6,251	6,141	5,968	5,918	5,798	8.9	6,156	9.3	5,652
Plastics and rubber products manufacturing	326	2,402	2,339	2,313	2,281	2,386	2,372	0.4	2,334	4.4	2,279
Non-metallic mineral product manufacturing	327	1,171	1,158	1,157	1,140	1,177	1,151	0.6	1,157	-0.2	1,125
Primary metal manufacturing	331	4,524	4,509	4,628	4,688	4,987	5,006	-9.1	4,587	-1.5	4,902
Fabricated metal product manufacturing	332	3,773	3,633	3,584	3,525	3,843	3,799	-3.8	3,629	1.3	3,676
Machinery manufacturing	333	4,604	4,515	4,543	4,451	4,559	4,523	-0.8	4,529	-3.2	4,522
Computer and electronic product manufacturing	334	3,946	3,858	4,174	4,175	4,541	4,465	-11.9	4,038	-11.3	4,398
Electrical equipment, appliance and component manufacturing	335	1,865	1,809	1,810	1,779	2,026	1,984	-6.7	1,816	-2.8	1,870
Transportation equipment manufacturing	336	9,333	9,117	8,984	8,534	10,233	10,250	-11.4	8,992	-17.9	9,637
Motor vehicle manufacturing	3361	1,650	1,525	1,402	1,277	1,341	1,363	9.0	1,463	-8.6	1,288
Motor vehicle body and trailer manufacturing	3362	463	456	437	416	500	514	-11.3	443	12.3	466
Motor vehicle parts manufacturing	3363	1,920	1,918	1,875	1,815	1,895	1,847	0.7	1,882	13.1	1,847
Aerospace product and parts manufacturing	3364	4,294	4,241	4,321	4,010	5,255	5,228	-19.0	4,216	-30.5	4,875
Railroad rolling stock manufacturing	3365	741	715	673	747	949	1,000	-23.9	719	-7.5	876
Ship and boat building	3366	123	121	126	130	138	140	-11.9	125	-1.8	129
Furniture and related product manufacturing	337	1,217	1,221	1,199	1,187	1,269	1,307	-5.2	1,206	2.7	1,238
Miscellaneous manufacturing	339	1,323	1,290	1,279	1,248	1,246	1,247	4.1	1,285	4.1	1,217
Non-durable goods industries [1]		**24,088**	**23,884**	**23,493**	**23,041**	**23,677**	**23,555**	**1.7**	**23,627**	**2.3**	**23,087**
Durable goods industries [2]		**36,474**	**36,266**	**36,322**	**35,192**	**39,017**	**39,367**	**-7.4**	**36,063**	**-7.1**	**37,118**
Manufacturing		**60,561**	**60,150**	**59,815**	**58,233**	**62,694**	**62,922**	**-4.0**	**59,690**	**-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 March	Current periods				Change from previous month			Trend change from previous month			
			Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004
		$ millions					percentage						
Food manufacturing	311	52	4,786	4,734	4,676	4,611	1.1	1.2	1.4	0.6	0.7	0.7	0.7
Beverage and tobacco product manufacturing	312	-20	1,621	1,641	1,641	1,616	-1.2	0.0	1.5	0.1	0.0	0.0	-0.1
Textile mills	313	5	472	467	458	470	1.0	2.0	-2.7	-0.3	-0.8	-1.2	-1.6
Textile product mills	314	2	355	353	350	353	0.5	0.9	-0.9	0.2	0.1	-0.2	-0.4
Clothing manufacturing	315	-4	1,343	1,346	1,367	1,383	-0.3	-1.5	-1.2	-0.4	-0.6	-0.9	-1.1
Leather and allied product manufacturing	316	-1	121	122	125	130	-0.7	-2.7	-3.3	-1.0	-1.4	-1.6	-1.7
Wood product manufacturing	321	-17	4,323	4,340	4,377	4,300	-0.4	-0.8	1.8	0.1	0.1	0.1	-0.1
Paper manufacturing	322	25	3,511	3,486	3,494	3,509	0.7	-0.2	-0.4	0.0	-0.1	-0.3	-0.3
Printing and related support activities	323	7	854	847	861	862	0.8	-1.6	-0.1	-0.2	-0.2	-0.3	-0.3
Petroleum and coal products manufacturing	324	71	2,184	2,113	2,062	2,053	3.3	2.5	0.4	1.4	1.5	1.4	1.1
Chemical manufacturing	325	-39	5,964	6,003	5,962	5,966	-0.6	0.7	-0.1	0.2	0.4	0.6	0.7
Plastics and rubber products manufacturing	326	41	2,327	2,287	2,272	2,290	1.8	0.7	-0.8	0.5	0.5	0.4	0.3
Non-metallic mineral product manufacturing	327	5	1,121	1,116	1,098	1,135	0.4	1.7	-3.3	-0.1	-0.2	-0.3	-0.2
Primary metal manufacturing	331	-2	4,612	4,614	4,684	4,688	0.0	-1.5	-0.1	-0.1	-0.1	-0.1	-0.3
Fabricated metal product manufacturing	332	130	3,735	3,605	3,559	3,551	3.6	1.3	0.2	0.5	0.5	0.3	0.0
Machinery manufacturing	333	20	4,551	4,531	4,542	4,488	0.4	-0.2	1.2	0.2	0.3	0.3	0.3
Computer and electronic product manufacturing	334	-3	3,929	3,932	4,000	4,123	-0.1	-1.7	-3.0	-0.7	-1.0	-1.3	-1.4
Electrical equipment, appliance and component manufacturing	335	39	1,829	1,789	1,790	1,805	2.2	0.0	-0.8	0.4	0.4	0.3	0.1
Transportation equipment manufacturing	336	245	9,272	9,028	8,933	8,788	2.7	1.1	1.6	0.6	0.4	0.0	-0.4
Motor vehicle manufacturing	3361	126	1,605	1,479	1,360	1,279	8.5	8.7	6.3	3.6	3.8	3.7	3.1
Motor vehicle body and trailer manufacturing	3362	11	444	433	427	431	2.5	1.4	-1.1	0.8	0.6	0.1	-0.4
Motor vehicle parts manufacturing	3363	17	1,909	1,892	1,854	1,786	0.9	2.0	3.8	0.5	0.5	0.4	0.2
Aerospace product and parts manufacturing	3364	62	4,311	4,249	4,332	4,254	1.5	-1.9	1.8	-0.3	-0.7	-1.0	-1.3
Railroad rolling stock manufacturing	3365	26	741	715	673	747	3.6	6.2	-9.9	0.7	-0.1	-1.4	-2.7
Ship and boat building	3366	4	123	119	121	122	3.6	-1.7	-0.9	-1.2	-1.0	-0.7	-0.4
Furniture and related product manufacturing	337	1	1,207	1,206	1,195	1,199	0.1	0.9	-0.4	0.2	0.1	0.0	-0.1
Miscellaneous manufacturing	339	36	1,308	1,272	1,255	1,251	2.8	1.3	0.3	0.6	0.8	0.9	1.0
Non-durable goods industries [1]		**138**	**23,537**	**23,400**	**23,267**	**23,243**	**0.6**	**0.6**	**0.1**	**0.3**	**0.4**	**0.4**	**0.4**
Durable goods industries [2]		**453**	**35,887**	**35,434**	**35,433**	**35,329**	**1.3**	**0.0**	**0.3**	**0.2**	**0.1**	**-0.1**	**-0.3**
Manufacturing		**591**	**59,424**	**58,834**	**58,700**	**58,572**	**1.0**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.0**

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	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$millions									
Textile mills	313	213	207	207	215	244	252	-19.5	211	-20.6	233
Textile product mills	314	92	89	86	84	97	103	-12.7	88	6.6	86
Clothing manufacturing	315	200	195	176	167	238	230	-10.2	185	3.6	199
Leather and allied product manufacturing	316	24	28	19	23	33	28	-10.2	23	-2.2	28
Plastics and rubber products manufacturing	326	454	431	367	352	362	382	7.1	401	1.9	366
Primary metal manufacturing	331	1,847	1,885	1,855	1,726	1,794	1,787	1.4	1,828	-2.8	1,757
Fabricated metal product manufacturing	332	4,148	3,785	3,659	3,479	3,565	3,629	5.4	3,768	-1.7	3,522
Machinery manufacturing	333	4,811	4,665	4,484	4,444	4,512	4,639	0.6	4,601	-14.5	4,380
Computer and electronic product manufacturing	334	3,052	3,048	3,133	3,407	3,589	3,744	-15.2	3,160	-5.5	3,483
Electrical equipment, appliance and component manufacturing	335	886	880	877	830	947	946	-9.3	868	-3.5	901
Transportation equipment manufacturing	336	18,776	18,464	18,891	18,311	20,693	21,510	-14.4	18,610	-26.7	20,074
Motor vehicle manufacturing	3361	814	750	637	644	557	591	18.1	711	-25.1	566
Motor vehicle body and trailer manufacturing	3362	504	498	465	432	453	465	-0.1	475	-1.5	430
Motor vehicle parts manufacturing	3363	1,222	1,220	1,236	1,178	1,018	1,075	13.0	1,214	25.4	1,093
Aerospace product and parts manufacturing	3364	11,898	11,856	12,418	11,698	13,691	14,491	-18.3	11,967	-34.2	13,167
Ship and boat building	3366	50	56	65	60	115	59	-15.2	58	230.1	83
Miscellaneous manufacturing	339	187	182	170	157	143	145	16.1	174	-13.4	162
Non-durable goods industries [1]		**2,007**	**1,982**	**1,849**	**1,825**	**1,967**	**2,029**	**-4.4**	**1,916**	**7.1**	**2,029**
Durable goods industries [2]		**35,182**	**34,313**	**34,397**	**33,723**	**36,592**	**37,714**	**-9.0**	**34,404**	**-18.7**	**35,629**
Manufacturing		**37,189**	**36,295**	**36,246**	**35,548**	**38,560**	**39,742**	**-8.7**	**36,319**	**-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 March	Current periods				Change from previous month			Trend change from previous month			
			Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004
		$ millions					percentage						
Textile mills	313	11	206	195	197	212	5.9	-0.9	-7.1	-1.2	-1.5	-1.7	-1.7
Textile product mills	314	0	85	84	83	84	0.6	1.7	-1.1	1.5	1.4	1.2	1.1
Clothing manufacturing	315	-7	177	184	182	181	-3.9	1.5	0.1	-0.8	-1.1	-1.3	-1.5
Leather and allied product manufacturing	316	-7	19	27	25	31	-28.0	7.7	-19.6	-8.3	-8.0	-6.5	-4.2
Plastics and rubber products manufacturing	326	18	446	428	383	367	4.2	11.9	4.4	3.3	3.6	3.4	3.0
Primary metal manufacturing	331	-45	1,770	1,815	1,789	1,755	-2.5	1.5	1.9	-0.1	0.0	0.1	0.3
Fabricated metal product manufacturing	332	363	4,148	3,785	3,659	3,479	9.6	3.4	5.2	1.4	1.6	1.7	1.5
Machinery manufacturing	333	145	4,811	4,665	4,484	4,444	3.1	4.1	0.9	1.0	1.2	1.3	1.3
Computer and electronic product manufacturing	334	4	3,052	3,048	3,133	3,407	0.1	-2.7	-8.0	-0.9	-1.1	-1.2	-1.1
Electrical equipment, appliance and component manufacturing	335	6	886	880	877	830	0.7	0.4	5.6	1.0	1.2	1.0	0.5
Transportation equipment manufacturing	336	438	19,063	18,625	19,010	18,558	2.4	-2.0	2.4	1.0	0.9	0.7	0.3
Motor vehicle manufacturing	3361	65	814	750	637	644	8.6	17.8	-1.1	4.5	5.6	6.3	6.3
Motor vehicle body and trailer manufacturing	3362	6	481	475	438	426	1.3	8.5	2.8	2.1	2.3	2.3	1.9
Motor vehicle parts manufacturing	3363	52	1,286	1,234	1,227	1,157	4.2	0.5	6.0	1.8	2.1	2.3	2.2
Aerospace product and parts manufacturing	3364	121	12,148	12,026	12,572	11,962	1.0	-4.3	5.1	0.9	0.9	0.7	0.4
Ship and boat building	3366	-9	47	56	67	70	-16.2	-16.0	-4.6	-7.1	-7.8	-7.9	-7.8
Miscellaneous manufacturing	339	5	189	184	174	165	2.6	6.1	5.3	1.6	1.8	1.6	1.1
Non-durable goods industries [1]		**5**	**1,956**	**1,951**	**1,862**	**1,858**	**0.3**	**4.8**	**0.2**	**0.6**	**0.2**	**-0.5**	**-1.3**
Durable goods industries [2]		**951**	**35,373**	**34,422**	**34,467**	**34,073**	**2.8**	**-0.1**	**1.2**	**0.8**	**0.8**	**0.7**	**0.4**
Manufacturing		**956**	**37,329**	**36,373**	**36,328**	**35,931**	**2.6**	**0.1**	**1.1**	**0.8**	**0.7**	**0.6**	**0.3**

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

Table 7-1

New orders by selected major group and industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	2004	% Change from 2002	2003
		$millions									
Textile mills	313	292	300	254	259	294	294	-3.2	1,105	-13.6	3,356
Textile product mills	314	194	191	168	180	192	200	-6.1	733	-11.2	2,290
Clothing manufacturing	315	584	642	576	527	607	680	-5.0	2,328	-6.4	7,066
Leather and allied product manufacturing	316	42	63	44	43	55	62	-14.2	192	-12.6	747
Plastics and rubber products manufacturing	326	2,249	2,363	1,946	1,824	2,167	2,123	2.8	8,381	0.1	24,666
Primary metal manufacturing	331	3,711	4,121	3,441	3,287	3,153	3,283	12.7	14,560	0.8	37,522
Fabricated metal product manufacturing	332	3,138	3,067	2,604	2,254	2,496	2,579	10.2	11,062	0.7	31,096
Machinery manufacturing	333	2,397	2,582	2,032	2,063	1,978	2,351	8.6	9,075	-0.7	25,351
Computer and electronic product manufacturing	334	1,508	1,988	1,264	1,598	1,197	1,724	12.2	6,357	-17.1	18,169
Electrical equipment, appliance and component manufacturing	335	884	968	866	778	816	871	7.5	3,496	-6.8	9,835
Transportation equipment manufacturing	336	11,857	11,685	10,500	10,164	10,088	10,633	12.6	44,206	-6.3	114,188
Motor vehicle manufacturing	3361	6,644	7,144	5,602	5,310	6,471	6,698	-2.1	24,699	-6.5	69,172
Motor vehicle body and trailer manufacturing	3362	337	363	312	340	323	331	4.0	1,352	-2.2	3,637
Motor vehicle parts manufacturing	3363	2,980	3,164	2,779	2,500	2,614	2,852	5.3	11,423	-1.0	31,557
Aerospace product and parts manufacturing	3364	1,259	540	1,591	1,414	194	418	2,663.7	4,804	-17.0	5,676
Ship and boat building	3366	115	102	108	85	155	110	-11.3	410	-3.2	1,134
Miscellaneous manufacturing	339	669	740	589	523	605	621	7.2	2,521	4.1	7,498
Non-durable goods industries [1]		**20,603**	**21,615**	**18,792**	**18,507**	**19,718**	**20,861**	**1.2**	**79,518**	**1.4**	**236,934**
Durable goods industries [2]		**29,676**	**30,589**	**25,676**	**24,796**	**25,078**	**26,734**	**11.1**	**110,737**	**-3.8**	**301,074**
Manufacturing		**50,279**	**52,204**	**44,468**	**43,303**	**44,795**	**47,595**	**6.8**	**190,254**	**-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 March	Current periods				Change from previous month			Trend change from previous month			
			Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004
		$ millions					percentage						
Textile mills	313	12	288	276	256	272	4.3	7.7	-5.8	0.2	0.0	-0.1	-0.2
Textile product mills	314	1	183	182	178	191	0.6	2.5	-7.0	0.0	0.0	-0.1	-0.3
Clothing manufacturing	315	-5	567	572	561	592	-0.9	1.9	-5.2	0.1	-0.1	-0.2	-0.2
Leather and allied product manufacturing	316	-10	51	61	54	58	-16.9	12.0	-5.6	-0.9	-1.5	-1.7	-1.6
Plastics and rubber products manufacturing	326	-65	2,120	2,185	2,080	2,051	-3.0	5.1	1.4	0.1	0.3	0.4	0.4
Primary metal manufacturing	331	-49	3,621	3,670	3,448	3,285	-1.3	6.4	5.0	1.8	2.3	2.4	2.4
Fabricated metal product manufacturing	332	238	3,141	2,902	2,822	2,487	8.2	2.9	13.5	0.4	0.9	1.4	1.8
Machinery manufacturing	333	14	2,346	2,332	2,161	2,217	0.6	7.9	-2.6	0.2	0.2	0.3	0.4
Computer and electronic product manufacturing	334	17	1,706	1,690	1,431	1,792	1.0	18.1	-20.1	0.9	1.3	1.4	1.5
Electrical equipment, appliance and component manufacturing	335	4	866	863	905	857	0.4	-4.7	5.6	0.0	0.5	0.9	1.0
Transportation equipment manufacturing	336	991	11,044	10,053	10,318	10,546	9.9	-2.6	-2.2	1.2	1.6	1.8	1.7
Motor vehicle manufacturing	3361	11	5,991	5,980	5,424	5,646	0.2	10.3	-3.9	1.3	1.3	1.0	0.6
Motor vehicle body and trailer manufacturing	3362	-24	303	327	311	342	-7.3	5.1	-9.1	-0.5	-0.1	0.2	0.3
Motor vehicle parts manufacturing	3363	70	2,855	2,785	2,751	2,612	2.5	1.2	5.3	0.7	1.0	1.0	1.0
Aerospace product and parts manufacturing	3364	749	1,281	533	1,625	1,333	140.5	-67.2	21.9	1.6	3.7	6.1	8.5
Ship and boat building	3366	3	84	82	97	94	3.3	-16.1	3.6	0.5	0.3	0.5	1.2
Miscellaneous manufacturing	339	-7	682	689	624	615	-1.0	10.4	1.4	1.2	1.4	1.4	1.2
Non-durable goods industries [1]		**-129**	**20,633**	**20,762**	**20,140**	**19,995**	**-0.6**	**3.1**	**0.7**	**0.7**	**0.9**	**1.0**	**1.0**
Durable goods industries [2]		**1,298**	**28,794**	**27,496**	**26,618**	**26,718**	**4.7**	**3.3**	**-0.4**	**1.1**	**1.4**	**1.6**	**1.6**
Manufacturing		**1,169**	**49,427**	**48,258**	**46,757**	**46,712**	**2.4**	**3.2**	**0.1**	**1.0**	**1.2**	**1.4**	**1.3**

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

Table 8-1

Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	444	444	386	431	426	418	1.4	1,704	-1.9	5,099
Starch and vegetable fat and oil manufacturing	31122	321	354	262	268	260	266	22.3	1,205	11.4	3,117
Sugar and confectionery product manufacturing	3113	304	308	292	261	307	305	2.9	1,165	10.0	3,764
Fruit and vegetable preserving and specialty food manufacturing	3114	525	503	497	516	492	511	4.6	2,041	-0.9	5,974
Dairy product manufacturing	3115	941	955	862	873	898	871	7.7	3,631	9.8	10,958
Meat product manufacturing	3116	1,593	1,646	1,463	1,470	1,426	1,478	9.5	6,173	-3.9	17,027
Cookie, cracker and pasta manufacturing	31182	138	133	130	122	133	130	1.9	522	-2.1	1,577
Other food manufacturing	3119	399	436	382	361	410	392	6.2	1,578	4.1	4,936
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	260	275	220	195	280	270	-0.4	951	12.7	3,336
Breweries	31212	344	346	253	237	288	279	18.6	1,180	1.0	3,858
Wineries	31213	59	61	53	45	53	53	16.1	218	-2.6	706
Distilleries	31214	54	47	37	42	83	77	-38.6	181	-18.0	831
Tobacco manufacturing	3122	243	257	220	215	248	276	-6.1	936	5.1	3,301
313 Textile mills											
Fibre, yarn and thread mills	3131	50	54	48	41	49	53	0.6	193	-12.6	547
Fabric mills	3132	179	187	161	157	194	203	-8.6	684	-10.6	2,180
Textile and fabric finishing and fabric coating	3133	57	59	52	54	60	61	-3.3	223	-10.8	694
314 Textile product mills											
Carpet and rug mills	31411	70	68	64	59	75	76	-9.6	261	-8.6	824
Textile bag and canvas mills	31491	22	22	17	15	23	21	-5.6	75	-30.9	267
315 Clothing manufacturing											
Hosiery and sock mills	31511	36	35	36	36	37	42	-9.1	142	-5.1	511
Other clothing knitting mills	31519	46	45	41	41	42	39	3.6	173	-0.4	587
Men's and boys' cut and sew clothing manufacturing	31522	174	192	172	154	166	177	1.1	692	-4.6	2,078
Women's and girls' cut and sew clothing manufacturing	31523	202	234	201	167	222	247	-8.5	804	-3.5	2,471
Clothing accessories and other clothing manufacturing	3159	25	21	21	21	22	23	1.2	88	-4.1	289
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	21	26	25	24	20	24	5.6	96	-17.7	401
321 Wood product manufacturing											
Sawmills and wood preservation	3211	1,556	1,562	1,248	1,087	1,303	1,319	7.6	5,453	-16.1	14,961
Veneer, plywood and engineered wood product manufacturing	3212	944	900	754	629	579	563	45.8	3,227	19.5	7,928
Other wood product manufacturing	3219	757	732	598	557	712	665	2.5	2,645	6.2	8,359
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	1,880	2,022	1,778	1,744	1,988	2,037	-4.5	7,424	-6.6	22,490
Paperboard container manufacturing	32221	428	455	396	401	471	489	-9.1	1,680	6.6	5,538
Paper bag and coated and treated paper manufacturing	32222	228	259	228	226	269	282	-12.1	941	0.8	3,033
Other converted paper product manufacturing	32229	131	146	127	135	136	133	2.2	539	-2.7	1,624
323 Printing and related support activities											
Printing	32311	920	1,000	831	794	917	967	0.2	3,545	-1.5	10,730
Support activities for printing	32312	74	75	66	58	79	79	-10.8	272	10.5	860
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	3,142	3,298	3,040	2,985	2,726	3,562	-1.2	12,465	10.6	34,729
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	275	291	249	264	244	259	7.6	1,078	12.8	3,023
Other basic organic chemical manufacturing	32519	317	347	295	300	294	337	1.7	1,258	-6.6	3,423
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	711	738	624	608	667	723	0.6	2,681	0.6	7,461
Pesticide and other agricultural chemical manufacturing	32532	103	101	62	44	77	80	32.2	310	21.2	444
Pharmaceutical and medicine manufacturing	3254	738	881	651	703	726	740	7.1	2,973	4.9	8,506
Paint and coating manufacturing	32551	190	195	159	138	173	176	7.0	682	3.5	2,028
Adhesive manufacturing	32552	64	70	56	55	69	62	2.9	245	8.4	772
Soap and cleaning compound manufacturing	32561	139	138	126	119	146	149	-13.7	523	-16.2	1,689
Toilet preparation manufacturing	32562	107	129	108	103	99	106	6.7	448	2.3	1,289
Printing ink manufacturing	32591	41	46	35	38	40	40	5.4	160	1.6	467
All other chemical product manufacturing	32599	346	373	333	323	332	349	2.5	1,376	2.8	3,989
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	166	167	132	111	166	146	-0.3	576	2.5	1,836
Polystyrene foam product manufacturing	32614	56	55	37	36	41	45	13.5	184	7.3	561
Other plastic product manufacturing	32619	1,092	1,108	914	828	1,077	971	2.3	3,943	2.5	11,881

Table 8-1 – continued

Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	2004	% Change from 2002	2003
Other rubber product manufacturing	32629	149	164	144	135	149	163	-0.1	592	-11.6	1,750
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	62	64	46	42	64	59	-5.6	215	5.4	722
Glass and glass product manufacturing	3272	183	181	152	148	179	169	2.4	663	0.0	2,084
Cement manufacturing	32731	117	98	74	58	109	82	11.1	347	1.2	1,479
Ready-mix concrete manufacturing	32732	227	185	145	108	187	147	21.0	666	5.1	2,761
Other concrete product manufacturing	32739	91	77	59	54	69	73	14.9	281	9.6	1,143
Abrasive product manufacturing	32791	23	24	20	18	28	31	-26.4	85	-13.5	294
All other non-metallic mineral product manufacturing	32799	159	148	125	124	149	125	6.3	556	12.3	1,683
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	992	1,060	862	835	856	859	7.5	3,750	-1.3	9,877
Iron and steel pipes and tubes manufacturing from purchased steel	33121	238	346	273	295	203	261	16.4	1,152	6.2	2,908
Foundries	3315	265	304	259	241	266	290	-2.0	1,069	1.4	3,223
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	60	62	56	50	51	50	16.2	227	4.4	583
Plate work and fabricated structural product manufacturing	33231	421	461	362	332	365	380	9.2	1,577	4.6	4,928
Power boiler and heat exchanger manufacturing	33241	106	125	91	80	95	103	17.3	401	31.9	1,275
Spring and wire product manufacturing	3326	128	140	120	115	138	142	-10.7	502	-12.0	1,575
Coating, engraving, heat treating and allied activities	3328	291	314	248	235	274	275	1.4	1,088	-0.6	3,043
Other fabricated metal product manufacturing	3329	308	322	276	234	316	306	-3.1	1,140	-6.5	3,486
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	208	225	171	170	211	214	3.4	773	-12.0	1,956
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	217	202	192	195	206	198	4.9	805	-7.2	2,465
All other general-purpose machinery manufacturing	33399	175	225	158	170	197	231	-5.3	727	-1.9	2,336
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	161	307	202	162	202	320	-12.6	833	-22.7	3,046
Communications equipment manufacturing	3342	531	724	536	439	443	551	17.0	2,229	-20.2	6,180
Audio and video equipment manufacturing	3343	16	22	14	14	19	16	-7.1	66	-12.2	211
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	84	88	72	66	73	79	1.3	310	-9.3	968
Small electrical appliance manufacturing	33521	21	27	22	25	20	22	17.6	96	-1.7	263
Major appliance manufacturing	33522	171	174	142	138	162	158	2.5	625	-3.4	1,754
Battery manufacturing	33591	21	20	18	17	18	17	10.2	77	19.0	217
Communication and energy wire and cable manufacturing	33592	204	221	190	164	172	195	13.9	779	-14.5	2,170
All other electrical equipment and component manufacturing	33599	40	42	38	35	34	34	12.8	155	-0.1	429
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	6,579	7,031	5,609	5,259	6,505	6,734	-3.5	24,477	-6.4	69,258
Motor vehicle parts manufacturing	3363	2,978	3,180	2,721	2,527	2,670	2,859	4.6	11,405	-0.1	31,433
Aerospace product and parts manufacturing	3364	1,216	1,102	871	1,241	994	972	13.1	4,431	1.5	11,586
Railroad rolling stock manufacturing	3365	194	189	191	165	192	240	-18.2	739	-7.7	2,370
Ship and boat building	3366	121	111	103	89	99	114	12.4	424	-5.4	1,100
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	668	700	624	649	648	644	4.0	2,641	-1.3	7,751
Office furniture (including fixtures) manufacturing	3372	411	459	383	411	427	474	-3.5	1,665	5.3	5,107
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	229	276	220	199	176	195	30.1	924	10.7	2,287
Other miscellaneous manufacturing	3399	434	453	355	325	431	430	-5.1	1,568	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	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	304	297	293	276	277	291	4.8	293	4.2	281
Starch and vegetable fat and oil manufacturing	31122	236	241	270	234	189	195	21.7	245	4.6	180
Sugar and confectionery product manufacturing	3113	290	294	286	294	288	296	-1.8	291	5.0	310
Fruit and vegetable preserving and specialty food manufacturing	3114	847	862	862	891	798	825	4.0	866	5.3	853
Dairy product manufacturing	3115	894	886	880	847	807	859	5.5	877	-3.6	813
Meat product manufacturing	3116	827	813	770	736	816	850	-5.4	786	-5.5	797
Cookie, cracker and pasta manufacturing	31182	122	126	120	124	133	131	-7.0	123	7.1	128
Other food manufacturing	3119	491	489	471	474	428	431	12.3	481	2.9	455
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	268	247	227	217	261	249	-0.7	240	7.8	250
Breweries	31212	199	188	186	185	191	177	5.7	190	0.8	185
Wineries	31213	254	254	250	252	245	251	0.8	253	4.8	251
Distilleries	31214	499	476	476	476	554	561	-13.5	482	3.3	528
Tobacco manufacturing	3122	456	524	513	462	455	458	8.0	489	-1.1	434
313 Textile mills											
Fibre, yarn and thread mills	3131	61	62	61	66	68	72	-6.9	63	0.3	69
Fabric mills	3132	338	335	336	335	395	393	-14.4	336	-12.3	378
Textile and fabric finishing and fabric coating	3133	76	74	72	72	74	73	-0.3	73	11.7	73
314 Textile product mills											
Carpet and rug mills	31411	87	88	88	86	108	109	-17.3	87	2.2	101
Textile bag and canvas mills	31491	38	37	37	39	46	46	-16.8	38	-32.1	42
315 Clothing manufacturing											
Hosiery and sock mills	31511	139	139	140	135	145	138	3.0	138	6.8	142
Other clothing knitting mills	31519	164	157	149	142	175	159	-2.0	153	6.1	164
Men's and boys' cut and sew clothing manufacturing	31522	409	429	451	450	527	532	-15.6	435	6.1	507
Women's and girls' cut and sew clothing manufacturing	31523	408	390	395	416	389	393	-2.4	402	1.0	416
Clothing accessories and other clothing manufacturing	3159	60	59	62	63	62	56	7.8	61	8.0	62
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	74	69	67	70	93	84	-17.4	70	-7.3	92
321 Wood product manufacturing											
Sawmills and wood preservation	3211	2,873	3,210	3,092	2,716	3,246	3,643	-10.9	2,973	-5.3	2,769
Veneer, plywood and engineered wood product manufacturing	3212	822	892	857	779	842	913	-2.3	837	5.4	761
Other wood product manufacturing	3219	1,023	1,053	1,016	970	1,048	1,080	-2.4	1,016	8.0	1,003
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	2,520	2,484	2,488	2,444	2,563	2,564	-2.3	2,484	-3.1	2,508
Paperboard container manufacturing	32221	483	480	468	457	494	475	-1.4	472	2.8	479
Paper bag and coated and treated paper manufacturing	32222	371	370	374	388	403	405	-5.6	376	4.9	391
Other converted paper product manufacturing	32229	145	140	140	136	153	154	-5.5	140	0.9	146
323 Printing and related support activities											
Printing	32311	826	833	832	811	855	857	0.4	825	-0.5	832
Support activities for printing	32312	32	34	31	33	38	47	-28.0	33	-32.0	37
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	1,949	1,890	1,773	1,691	1,795	1,724	4.8	1,826	1.4	1,703
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	272	265	250	246	246	233	11.3	258	8.7	243
Other basic organic chemical manufacturing	32519	341	362	329	303	365	365	-4.5	334	8.8	346
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	592	601	605	568	618	570	4.7	591	3.2	566
Pesticide and other agricultural chemical manufacturing	32532	128	130	110	96	87	87	38.3	116	29.1	84
Pharmaceutical and medicine manufacturing	3254	2,837	2,801	2,841	2,838	2,538	2,533	14.9	2,829	14.4	2,543
Paint and coating manufacturing	32551	280	281	277	269	286	275	2.5	277	2.8	268
Adhesive manufacturing	32552	106	104	104	99	95	94	12.9	103	12.8	95
Soap and cleaning compound manufacturing	32561	98	98	100	94	108	108	-11.8	97	-29.0	106
Toilet preparation manufacturing	32562	189	192	186	187	197	196	-3.1	189	8.6	194
Printing ink manufacturing	32591	83	88	87	78	72	67	17.4	84	12.0	74
All other chemical product manufacturing	32599	385	384	380	372	418	425	-8.9	380	1.3	399
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	379	352	340	322	372	378	-5.7	348	-8.5	340
Polystyrene foam product manufacturing	32614	60	60	55	55	56	60	1.2	57	16.6	54
Other plastic product manufacturing	32619	988	967	962	947	961	980	1.9	966	7.4	938

Table 8-2 – continued

Inventory owned for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
Other rubber product manufacturing	32629	140	136	134	136	148	145	-5.5	137	-12.9	138
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	77	76	75	68	83	83	-9.5	74	-8.1	76
Glass and glass product manufacturing	3272	255	251	253	249	256	256	-0.8	252	-2.1	252
Cement manufacturing	32731	201	203	210	197	206	206	-2.0	203	-6.8	182
Ready-mix concrete manufacturing	32732	81	81	84	84	86	85	-4.1	82	-7.7	87
Other concrete product manufacturing	32739	141	135	135	134	120	111	24.0	136	11.8	117
Abrasive product manufacturing	32791	49	49	49	50	68	67	-28.4	49	-19.4	61
All other non-metallic mineral product manufacturing	32799	124	129	130	130	134	136	-3.1	128	8.2	131
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,592	1,614	1,746	1,830	1,961	1,972	-16.6	1,696	-1.8	1,950
Iron and steel pipes and tubes manufacturing from purchased steel	33121	466	431	473	523	522	518	-6.5	473	2.3	495
Foundries	3315	299	285	273	277	303	303	-4.6	284	1.6	291
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	84	84	83	81	85	88	-4.4	83	2.2	83
Plate work and fabricated structural product manufacturing	33231	787	720	680	657	714	679	5.5	711	-1.7	677
Power boiler and heat exchanger manufacturing	33241	93	90	89	88	107	106	-13.0	90	4.1	96
Spring and wire product manufacturing	3326	160	154	149	140	198	196	-24.9	151	-11.6	172
Coating, engraving, heat treating and allied activities	3328	172	169	176	164	182	180	-7.3	170	-1.9	169
Other fabricated metal product manufacturing	3329	608	607	597	610	583	581	5.0	606	6.5	579
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	425	423	445	440	497	524	-16.5	433	1.2	474
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	319	313	304	297	330	314	-2.7	308	-7.2	324
All other general-purpose machinery manufacturing	33399	560	532	559	554	461	472	13.3	551	15.1	530
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	575	562	562	579	662	673	-16.6	570	1.2	669
Communications equipment manufacturing	3342	2,076	2,039	2,294	2,307	2,471	2,435	-13.8	2,179	-12.2	2,387
Audio and video equipment manufacturing	3343	55	53	60	59	63	65	-10.1	57	5.0	59
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	141	139	143	136	145	152	-7.3	140	-9.1	141
Small electrical appliance manufacturing	33521	41	39	39	40	40	39	3.0	40	9.3	40
Major appliance manufacturing	33522	204	198	192	178	207	203	0.0	193	11.9	186
Battery manufacturing	33591	45	44	44	42	36	34	29.1	44	-10.8	37
Communication and energy wire and cable manufacturing	33592	789	768	785	773	889	862	-7.2	779	-0.1	808
All other electrical equipment and component manufacturing	33599	106	101	98	99	106	102	-2.4	101	-2.0	103
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	1,650	1,525	1,402	1,277	1,341	1,363	9.0	1,463	-8.6	1,288
Motor vehicle parts manufacturing	3363	1,920	1,918	1,875	1,815	1,895	1,847	0.7	1,882	13.1	1,847
Aerospace product and parts manufacturing	3364	4,294	4,241	4,321	4,010	5,255	5,228	-19.0	4,216	-30.5	4,875
Railroad rolling stock manufacturing	3365	741	715	673	747	949	1,000	-23.9	719	-7.5	876
Ship and boat building	3366	123	121	126	130	138	140	-11.9	125	-1.8	129
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	770	782	763	761	821	855	-7.1	769	1.3	790
Office furniture (including fixtures) manufacturing	3372	335	328	324	322	330	331	0.2	327	8.9	335
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	296	291	305	308	238	232	25.3	300	13.0	255
Other miscellaneous manufacturing	3399	1,027	998	974	940	1,008	1,014	-1.0	985	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							
April 2003	26,694	14,530	21,469	62,694	26,396	14,438	20,954	61,789
May 2003	25,843	14,491	21,346	61,680	26,047	14,259	20,937	61,243
June 2003	25,401	13,943	20,938	60,282	25,824	13,870	20,788	60,481
July 2003	25,574	13,406	20,505	59,485	25,873	13,602	20,654	60,129
August 2003	25,520	13,515	20,386	59,420	25,705	13,443	20,393	59,541
September 2003	25,155	13,396	20,250	58,801	25,527	13,401	20,379	59,307
October 2003	25,050	13,298	19,852	58,200	25,208	13,313	20,227	58,748
November 2003	24,917	13,593	20,136	58,646	25,053	13,459	20,196	58,708
December 2003	24,883	12,896	19,415	57,195	24,981	13,184	20,137	58,301
January 2004	25,505	12,991	19,737	58,233	25,272	13,253	20,046	58,572
February 2004	25,907	13,437	20,472	59,815	25,187	13,226	20,286	58,700
March 2004	26,048	13,343	20,759	60,150	25,434	13,224	20,176	58,834
April 2004	26,117	13,527	20,917	60,561	25,781	13,346	20,298	59,424

Table 10

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	2004	% Change from 2002	2003
	$ millions									
Total										
Newfoundland and Labrador	205	199	178	172	177	166	15.4	754	12.5	2,827
Prince Edward Island	102	107	96	94	92	90	12.3	398	2.2	1,356
Nova Scotia	743	766	632	657	670	732	1.9	2,798	2.7	8,524
New Brunswick	1,124	1,110	956	877	1,032	1,095	-0.4	4,068	2.7	12,864
Quebec	11,423	12,078	10,129	10,138	10,515	11,074	4.9	43,768	-1.3	128,514
Ontario	26,348	27,803	23,308	22,350	25,075	26,205	0.9	99,810	-1.7	289,216
Manitoba	1,014	1,107	927	917	975	977	6.3	3,966	1.3	11,413
Saskatchewan	791	903	715	667	688	706	16.4	3,076	3.7	7,913
Alberta	4,153	4,479	3,767	3,735	3,623	4,094	6.7	16,134	5.0	45,838
British Columbia	3,472	3,595	3,058	2,793	3,124	3,134	7.3	12,918	-3.3	37,223
311 Food manufacturing										
Newfoundland and Labrador	52	55	51	53	47	49	12.1	211	-9.3	1,056
Prince Edward Island	66	69	61	63	57	62	9.4	259	-1.0	902
Nova Scotia	161	163	147	144	148	167	0.8	614	-0.7	1,999
New Brunswick	123	136	115	122	111	110	13.8	496	0.6	2,035
Quebec	1,316	1,346	1,234	1,208	1,203	1,210	8.7	5,103	5.2	15,170
Ontario	2,181	2,189	2,004	1,998	2,090	2,069	5.9	8,372	1.9	25,005
Manitoba	224	234	203	216	200	203	12.2	878	1.0	2,457
Saskatchewan	185	205	163	160	173	156	12.7	712	4.0	1,947
Alberta	755	792	685	705	704	720	6.4	2,937	-3.5	7,976
British Columbia	387	403	353	352	400	391	0.3	1,494	3.5	4,890
312 Beverage and tobacco product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	280	314	251	254	300	313	0.2	1,099	9.4	3,965
Ontario	449	441	347	321	431	430	-0.6	1,558	0.6	5,316
Saskatchewan	3	3	2	2	3	2	13.8	10	-48.8	33
British Columbia	98	92	73	64	91	84	6.0	327	0.4	1,091
313 Textile mills										
Quebec	166	170	150	147	184	191	-9.8	633	-13.6	2,046
Ontario	90	98	86	84	90	92	1.6	357	-10.0	1,028
314 Textile product mills										
Quebec	71	68	63	65	78	81	-11.3	267	-11.0	912
Ontario	88	87	77	79	92	89	-6.7	332	-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	362	398	358	314	379	401	-3.4	1,431	-7.0	4,247
Ontario	148	153	142	136	156	157	-7.1	578	-6.1	1,923
Manitoba	19	22	22	21	17	20	10.7	84	-5.0	264
Saskatchewan	2	2	2	2	2	2	-4.5	9	7.6	28
Alberta	12	11	11	10	11	11	5.3	44	-1.2	139
British Columbia	x	x	x	x	x	x	x	x	0.0	x
316 Leather and allied product manufacturing										
Quebec	22	23	24	23	23	25	-4.5	93	-9.4	390
Ontario	12	20	17	14	16	20	-9.8	63	-15.5	239
321 Wood product manufacturing										
Nova Scotia	50	51	35	41	44	41	9.8	176	-1.8	544
Quebec	898	866	699	620	778	749	7.0	3,083	-0.9	8,848
Ontario	583	552	441	390	506	479	4.8	1,966	-2.0	6,058
Manitoba	73	74	61	52	54	50	32.8	259	4.5	697
Saskatchewan	58	56	47	36	31	32	61.4	197	14.6	468
Alberta	332	318	272	235	212	205	41.4	1,157	11.3	2,932
British Columbia	1,088	1,099	911	781	827	856	17.5	3,879	-12.0	9,913
322 Paper manufacturing										
Nova Scotia	77	74	72	75	79	76	3.4	298	1.3	875
Quebec	845	916	800	808	916	948	-7.8	3,368	-8.4	10,620
Ontario	861	934	816	813	935	989	-8.9	3,424	-1.9	10,825
Alberta	147	161	137	130	173	178	-8.3	576	1.4	1,788
British Columbia	471	526	465	436	494	503	-0.6	1,898	2.8	5,652

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	2004	% Change from 2002	2003
323 Printing and related support activities										
Quebec	237	248	223	212	247	247	-0.2	920	-3.7	2,758
Ontario	558	612	499	470	551	593	-0.5	2,139	0.4	6,423
Manitoba	41	47	38	36	43	40	3.3	161	-1.2	510
Saskatchewan	10	14	10	11	11	14	-2.2	45	5.4	147
Alberta	59	59	49	48	56	60	-3.2	215	-5.6	662
British Columbia	62	67	54	53	59	64	-1.5	237	-8.5	758
324 Petroleum and coal products manufacturing										
Quebec	686	741	728	714	602	794	-1.0	2,870	12.2	8,007
Ontario	1,060	1,076	1,041	1,052	914	1,176	2.8	4,230	6.8	11,670
Alberta	692	777	671	692	591	824	-0.7	2,833	10.2	8,200
British Columbia	x	x	x	x	x	x	x	x	0.0	x
325 Chemical manufacturing										
Quebec	789	771	654	628	743	729	2.6	2,841	0.0	8,556
Ontario	1,969	2,104	1,749	1,738	1,856	1,930	3.2	7,560	3.1	21,357
Manitoba	62	81	58	70	75	67	1.4	271	28.2	814
Saskatchewan	129	107	84	77	96	88	27.2	396	16.5	799
Alberta	772	790	682	698	663	771	1.3	2,942	5.5	8,285
British Columbia	100	95	82	76	99	90	0.0	352	6.6	1,084
326 Plastics and rubber products manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	546	580	467	438	538	529	3.4	2,032	5.8	6,038
Ontario	1,331	1,370	1,173	1,102	1,319	1,267	-0.7	4,976	-0.9	14,790
Manitoba	52	50	42	39	49	45	1.8	184	5.7	568
Saskatchewan	12	11	8	8	11	10	2.4	38	3.5	107
Alberta	72	77	63	53	65	68	7.5	265	0.9	836
British Columbia	97	94	81	75	101	92	-2.3	346	9.6	1,156
327 Non-metallic mineral product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	232	204	150	133	208	177	11.1	720	4.3	2,679
Ontario	473	424	342	305	449	378	4.0	1,543	5.6	5,560
Saskatchewan	5	4	2	2	4	3	11.0	12	-7.7	71
Alberta	122	108	92	90	112	106	-2.2	412	-0.7	1,556
British Columbia	134	131	111	93	120	111	10.7	468	11.6	1,416
331 Primary metal manufacturing										
Quebec	1,545	1,641	1,339	1,316	1,197	1,228	20.1	5,842	3.1	14,769
Ontario	1,673	1,782	1,426	1,423	1,509	1,587	3.2	6,304	-2.9	16,907
Alberta	138	193	157	162	134	168	4.9	650	41.3	1,812
332 Fabricated metal product manufacturing										
Newfoundland and Labrador	20	14	13	14	11	9	72.0	62	49.4	153
Prince Edward Island	2	3	1	2	2	2	-6.9	9	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	573	595	495	449	519	529	5.2	2,112	0.5	6,597
Ontario	1,584	1,656	1,386	1,282	1,505	1,489	2.5	5,908	-3.9	17,460
Manitoba	59	60	49	45	51	48	10.4	214	6.0	620
Saskatchewan	34	36	28	28	34	34	4.0	126	4.9	389
Alberta	281	356	275	255	255	285	13.4	1,167	22.7	3,410
British Columbia	168	167	135	124	140	140	9.1	593	0.4	1,721
333 Machinery manufacturing										
Quebec	382	433	369	358	381	458	-3.1	1,543	-3.7	4,920
Ontario	1,193	1,225	1,037	1,034	1,151	1,231	-1.6	4,490	-6.8	13,688
Manitoba	76	84	65	72	68	76	7.1	297	-9.0	802
Saskatchewan	68	71	59	46	68	68	3.2	245	-10.7	611
Alberta	344	358	280	304	254	291	23.4	1,286	13.0	3,308
British Columbia	154	184	156	141	146	156	7.3	635	9.1	1,837
334 Computer and electronic product manufacturing										
Quebec	442	672	468	428	405	549	7.7	2,010	-17.3	5,856
Ontario	783	1,056	786	729	708	880	10.8	3,354	-7.6	9,773
Saskatchewan	x	x	x	x	x	x	x	x	0.0	x
Alberta	128	175	137	83	103	136	9.8	524	-31.8	1,520
British Columbia	98	107	96	83	90	76	22.1	384	-10.0	1,101

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	Apr. 2004	Mar. 2004	Feb. 2004	Jan. 2004	Apr. 2003	Mar. 2003	% Change from 2003	2004	% Change from 2002	2003
335 Electrical equipment, appliance and component manufacturing										
Quebec	302	321	262	258	264	293	5.0	1,143	-1.3	3,405
Ontario	482	539	464	413	458	500	4.6	1,898	-7.9	5,458
Manitoba	12	14	13	12	15	14	-12.6	50	-22.0	166
Saskatchewan	13	15	12	11	12	12	13.5	50	-31.9	145
Alberta	37	39	33	30	27	27	35.4	139	9.7	356
British Columbia	x	x	x	x	x	x	x	x	0.0	x
336 Transportation equipment manufacturing										
Nova Scotia	70	65	57	55	61	68	5.3	247	-10.6	707
Quebec	1,223	1,199	907	1,299	1,065	1,087	9.1	4,628	-7.1	12,570
Ontario	9,869	10,440	8,605	8,079	9,380	9,875	-0.9	36,993	-3.3	103,510
Manitoba	150	167	132	119	172	177	-8.5	568	3.6	1,697
Saskatchewan	22	23	20	19	23	21	-1.7	84	-11.5	240
Alberta	65	67	61	71	74	72	-3.0	263	9.0	780
British Columbia	93	100	87	82	95	88	4.7	362	-36.7	991
337 Furniture and related product manufacturing										
Quebec	329	353	309	304	340	358	-1.2	1,295	-5.6	3,940
Ontario	631	690	596	660	622	645	3.0	2,576	6.2	7,627
Manitoba	45	47	44	38	45	48	-2.2	174	-1.0	544
Saskatchewan	6	6	5	5	6	6	-1.2	22	8.7	68
Alberta	73	76	63	65	73	73	-3.1	276	-10.5	851
British Columbia	74	72	62	57	68	64	1.0	265	5.6	799
339 Miscellaneous manufacturing										
Newfoundland and Labrador	x	x	x	x	x	x	x	x	0.0	x
Quebec	177	218	179	160	143	178	18.0	735	-1.1	2,221
Ontario	330	354	273	231	334	329	-5.0	1,188	2.6	3,560
Manitoba	17	22	14	13	12	13	20.5	65	-2.1	175
Saskatchewan	5	5	4	4	5	4	5.6	18	13.6	55
Alberta	46	41	32	45	42	28	17.5	165	44.3	534
British Columbia	57	63	51	47	46	50	16.6	218	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

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
			%		
April 2003	0.55	0.91	0.83	1.26	2.17
May 2003	0.56	0.94	0.81	1.28	2.14
June 2003	0.55	0.94	0.81	1.33	2.23
July 2003	0.62	0.97	0.85	1.42	2.23
August 2003	0.53	0.98	0.85	1.36	2.24
September 2003	0.57	0.99	0.91	1.42	2.07
October 2003	0.57	1.01	1.00	1.39	2.08
November 2003	0.59	1.03	0.98	1.31	2.04
December 2003	0.58	1.06	1.06	1.35	2.00
January 2004	0.57	1.08	1.04	1.36	1.89
February 2004	0.54	1.10	1.00	1.40	1.91
March 2004	0.55	1.10	1.00	1.39	2.12
April 2004	0.60	1.15	0.97	1.31	2.28

2. Non-sampling Error Measures

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

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

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

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

Text Table 2

Average national weighted rates by characteristic

Characteristic	Response	Imputation	Editing
	%		
Shipments	91.30	6.01	2.69
Raw materials	79.42	16.90	3.68
Goods in process	64.31	9.91	25.78
Finished products	79.75	13.40	6.86
Unfilled orders	80.83	7.22	11.95

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.