Catalogue no. 31-001-XIE

Monthly Survey of Manufacturing

May 2004

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Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
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

- With a push from soaring industrial prices, manufacturers chalked up their sixth consecutive increase in shipments, rising 1.1% to $49.1 billion in May. Meanwhile, the level of new orders moderated slightly (-0.8%), the first decline in six months.

Analysis – May 2004

With a push from soaring industrial prices, manufacturers chalked up their sixth consecutive increase in shipments, rising 1.1% to $49.1 billion in May. Meanwhile, the level of new orders moderated slightly (-0.8%), the first decline in six months.

Manufacturers' post healthy gains

A robust global economy, coupled with the recent surge in prices for some of Canada's resource-based industries, has generated a momentum in the Canadian manufacturing sector not seen since the economic boom of the late 1990s. During the first five months of 2004, with the trend on a healthy upswing, shipments rose 4.1% compared to the same period in 2003.

Shipments increased in 13 of the 21 manufacturing industries in May, representing 60% of total shipments. Non-durable goods industries jumped by 2.6% to $21.2 billion, boosted by the price-inflated petroleum industry. Durable goods manufacturing was essentially unchanged at $27.9 billion (+0.1%).

Shipments advance in most provinces

Ontario and British Columbia led the eight provinces reporting higher output in May. Ontario's manufacturers posted a fourth straight increase as shipments rose by $458 million (+1.8%) to reach $25.7 billion. Petroleum and motor vehicle manufacturing were the primary contributors.

Strong demand and increasing prices for British Columbia's forestry-related industries anchored healthy gains in May among the province's manufacturers. Shipments were up $134 million (+3.9%) to $3.5 billion, led by significant increases in the shipments of paper and wood products industries.

Partly offsetting Canada's overall increase in May's shipments, manufacturing in Quebec and Alberta slowed down somewhat, following periods of extended expansion. Shipments in Quebec fell by $161 million (-1.4%) to $11.4 billion. Alberta reported their first shipment decline in 10 months (-$86 million, -2.0%); as well, the Territories decreased by $2 million (-22.6%) compared with April.

Text Table 1

Shipments by province and territory

	April 2004	May 2004	April 2004 to May 2004
	seasonally adjusted		
	$ millions		% change
Canada	**48,575**	**49,124**	**1.1**
Newfoundland and Labrador	249	256	2.8
Prince Edward Island	122	130	6.9
Nova Scotia	783	794	1.5
New Brunswick	1,176	1,283	9.0
Quebec	11,525	11,364	-1.4
Ontario	25,245	25,703	1.8
Manitoba	987	1,035	4.8
Saskatchewan	744	769	3.4
Alberta	4,319	4,233	-2.0
British Columbia	3,415	3,550	3.9
Yukon Territory	1	1	0.8
Northwest Territories including Nunavut	8	6	-26.0

Escalating industrial prices

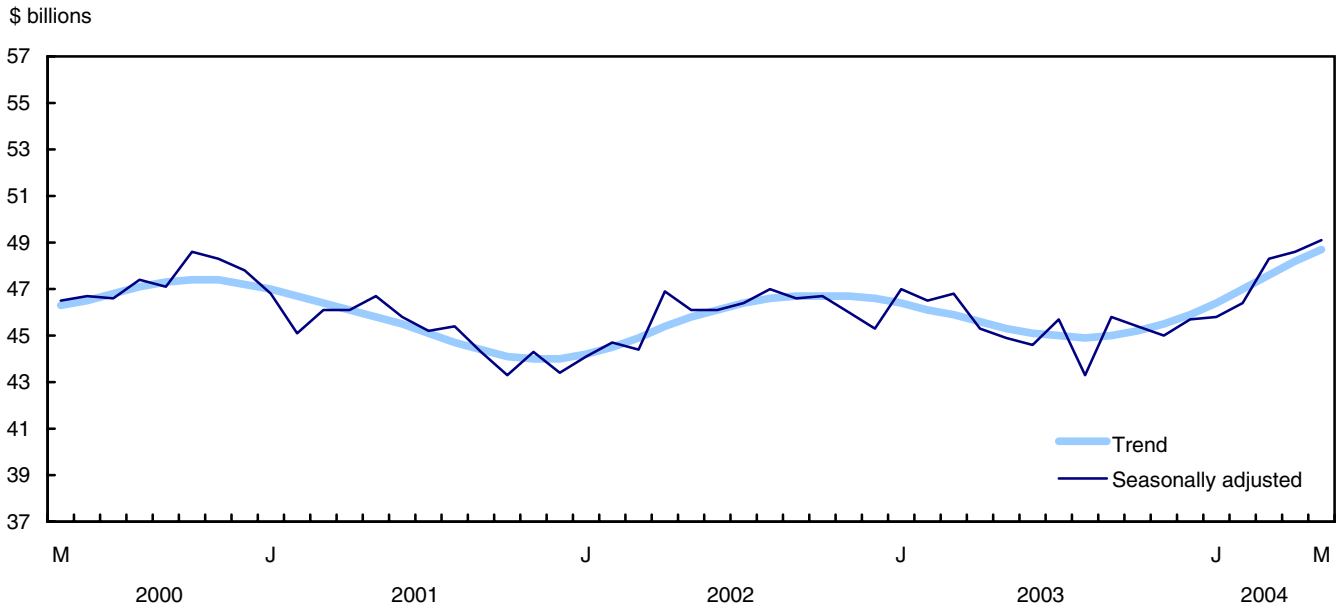
Prices for petroleum and coal products shot up nearly 10% in May. This is the biggest monthly gain in prices since February 2003. Strong demand, coupled with fears of supply shortages associated with geopolitical tensions in several oil-rich regions around the world, has contributed to the recent run up in prices. Petroleum shipments soared 8.2% to $3.8 billion in May.

Paper manufacturers posted shipments of $2.8 billion, up 4.4%, the highest level in a year. A recent string of order announcements and an upturn in prices contributed to the rising trend in paper manufacturing shipments in 2004.

Motor vehicle manufacturers reported shipments of $6.1 billion (+1.3%) in May, the highest level in almost one year. A boost in retail incentives in the United States seems to have quelled consumers' concerns about higher gasoline prices in May, as retail sales of automobiles rebounded south of the border, compared to May 2003. Several popular models in the United States are manufactured in Canada.

Chart 1

Shipments rise for the sixth month in a row



Inventories continue to accumulate

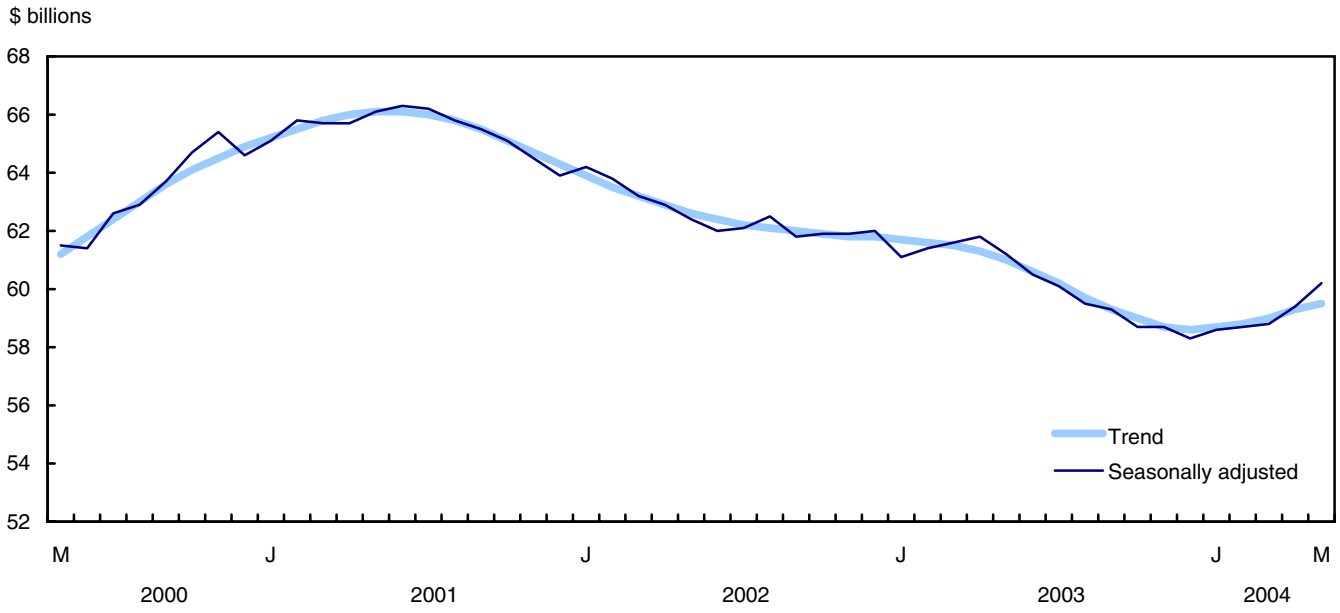
Inventories rose 1.4% to $60.2 billion in May, breaking the $60 billion mark for the first time since July 2003. All three stages of fabrication of inventories contributed to the rise. Improved confidence in the economy saw manufacturers boost raw material inventories to $26.1 billion (+1.4%), following solid increases in March (+1.0%) and April (+1.3%).

Goods-in-process inventories rose by 1.6%, the second increase in a row, while inventories of finished products also shifted up by 1.3% to $20.5 billion, the highest level since last summer.

Increases in inventories were wide ranging in May. Aerospace manufacturing (+5.0%), primary metals (+3.9%) and machinery (+2.3%) were the top contributors.

Chart 2

Manufacturers continue to stock up



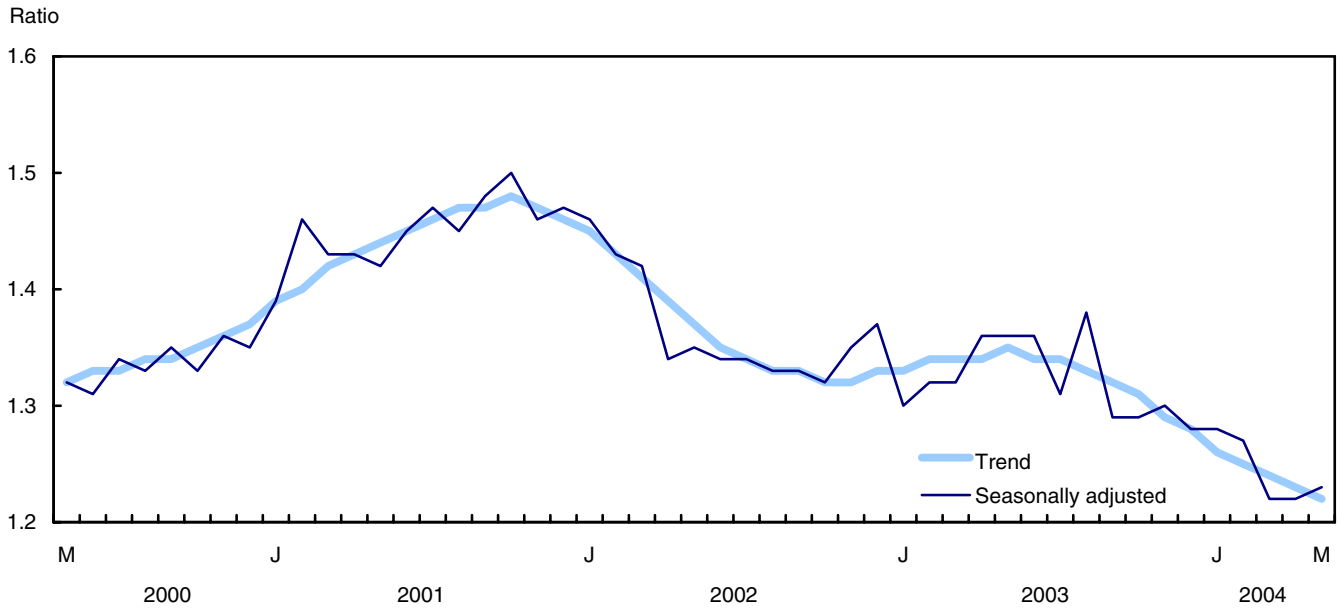
Higher shipments keep the inventory-to-shipment ratio in check

The inventory-to-shipment ratio for May remained just shy of the lowest level on record. The ratio edged up to 1.23 in May from April's 1.22, the lowest ratio since the beginning of the current series in 1992. Shipments and inventories have been rising at a similar pace for the last two months, which has kept the ratio quite stable.

The finished-products inventory-to-shipment ratio remained unchanged at 0.42 for the third consecutive month. The ratio is a key measure of the time (in months) required in order to exhaust inventories if shipments were to remain at their current level.

Chart 3

The inventory-to-shipments ratio edges up slightly from recent low



Backlog of orders subsides

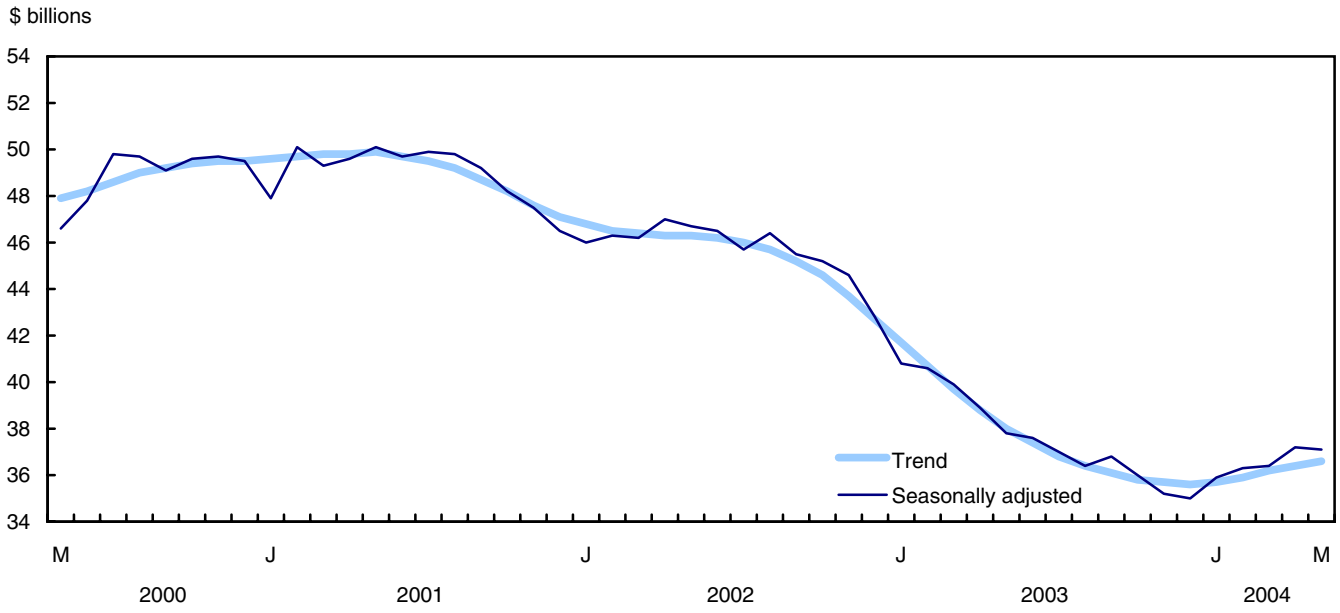
Manufacturers reported the first decrease in unfilled orders since December. Orders edged back 0.2% to $37.1 billion, largely because of the aerospace products and parts industry (-2.6%). Excluding the aerospace industry, unfilled orders were up 0.9%.

Since the beginning of the year, unfilled orders have risen by a strong 6.0%, as a result of the robust global economy. However, with the soaring costs of energy and other raw inputs used in manufacturing, the short-term outlook for orders remains undecided.

A build-up in unfilled orders for machinery (+4.2%), fabricated metal products (+2.0%) and motor vehicles (+6.9%) largely offset May's decline in aerospace orders.

Chart 4

Unfilled orders edge back



Manufacturers receive fewer new orders in May

Following a string of contract signings in recent months, new orders decreased 0.8% to $49 billion in May, the first decline since November. Despite the drop, new orders remain almost 11% above levels of just six months ago.

Decreases in the aerospace (-42.5%), fabricated metal products (-7.1%) and motor vehicle parts (-2.9%) industries contributed.

Manufacturing insights: Canada and US manufacturing activity in synch

With the majority of Canadian exports destined for the American market, the United States is clearly Canada's primary trading partner. During 2003, close to 86% of all merchandise exports was shipped to the United States. Of goods manufactured in Canada, just over half are exported to the United States. Since the US economy is a dominant influence, it might be expected that economic events in the United States will directly impact the Canadian manufacturing sector.

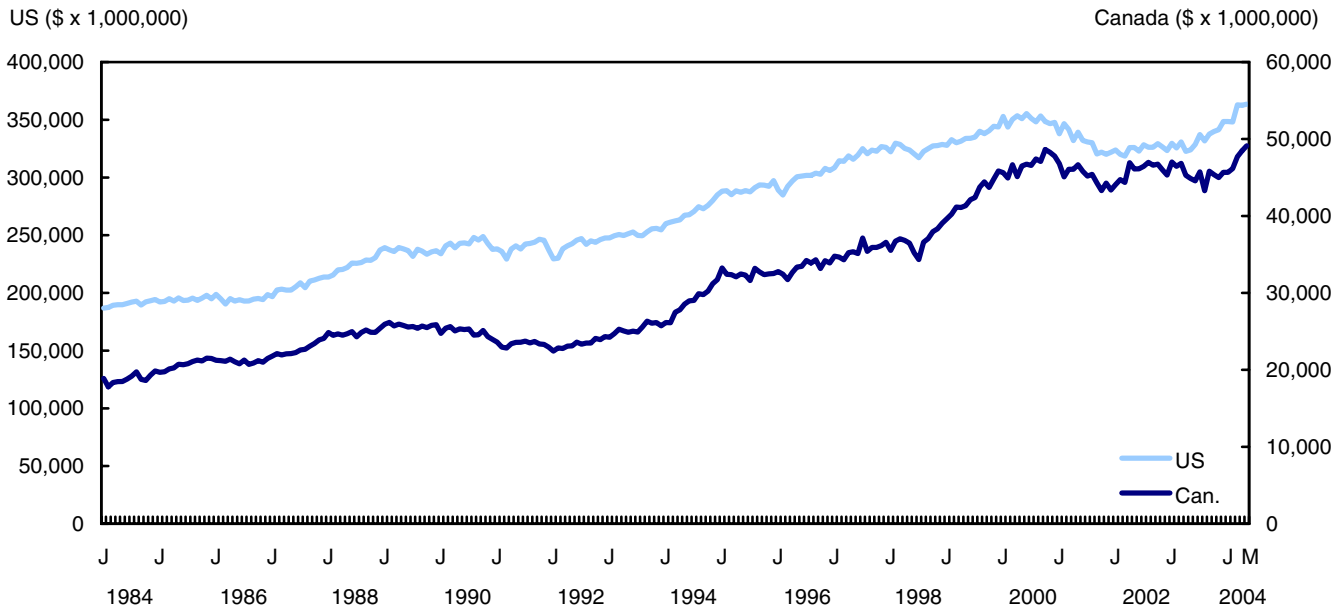
The question arises: Is there a lag between Canadian and US manufacturing trends, and if so, how long does it take Canadian manufacturers to adjust following a shift in the United States? The following is a preliminary review of the trends in manufacturing activity in Canada and the United States. Data from this analysis are from CANSIM tables 304-0002, 304-0003 and 304-0014 and the United States Census Bureau. Additional analysis would be required to fully examine this question.

It could be expected that Canadian manufacturers require some time to respond to changes in US demand, and this would be reflected in their manufacturing data. However, upon examining the monthly levels of manufacturing shipments for both Canada and the United States over the last 20 years, there is no obvious or consistent lag time between US and Canadian manufacturing. In fact, the two countries' manufacturing levels appear to be very much in synch.

The transportation equipment industry comprises a large component of total manufacturing in Canada. This industry operates to a large extent on a just-in-time inventory system. The data were examined excluding transportation equipment, in case this industry was driving the overall trend. Again, there was no lag evident between the two countries over the last 20 years. In fact, even looking as far back as 1970, the movements in shipments are very similar in both countries.

Chart 5

Canada - US Manufacturing Shipments, 1984-2004



Over the long run, manufacturing in Canada and the United States appears to be in synch, though the magnitude of the upturns or downturns may differ. These differences can be revealed by focussing on the shorter time periods surrounding significant economic turning points.Just-in-time inventory management systems used in certain industries do not appear to be a main factor in the tandem movements in manufacturing activity.

Following the high-tech crash and the slowdown in the global economy in 2001, manufacturing shipments declined in both countries. Canadian shipments decreased 11% from the peak in October 2000 ($48.6 billion) to $43.3 billion in October 2001. Canadian shipments rebounded in 2002 to pre-2000 levels, but fell back in August 2003 ($43.3 billion). Meanwhile, US shipments declined slightly less, but remained depressed far longer. Shipments in the United States declined 10.4% from $355.3 billion in June 2000 to $318.5 billion in March 2002. US manufacturing did recover sooner in 2003 than Canadian manufacturing.

The slower recovery of the Canadian manufacturing sector may have been the result of several unexpected events that battered the economy in 2003, including the mad cow disease crisis, the SARS outbreak and the blackout in Ontario. Other factors that may have affected shipments during this period include increasing globalization and the rising value of the Canadian dollar.

Just-in-time inventory management systems used in certain industries do not appear to be a main factor in the tandem movements in manufacturing activity.

The data for the 2000 to 2004 period appear to show some lag time between declines or increases in the US and Canadian manufacturing levels. However, this period is unique relative to the long-term trend.

Chart 6

Canada - US Manufacturing Shipments, 2000-2004

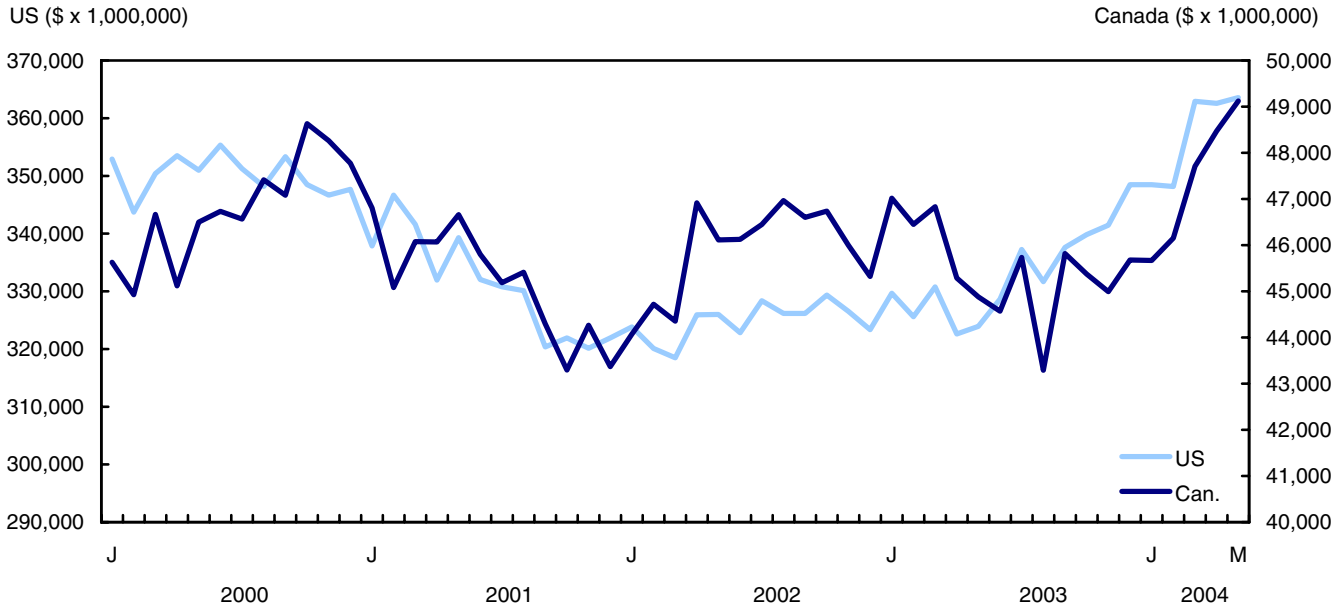


Chart 7

Inventories - Monthly change in trend

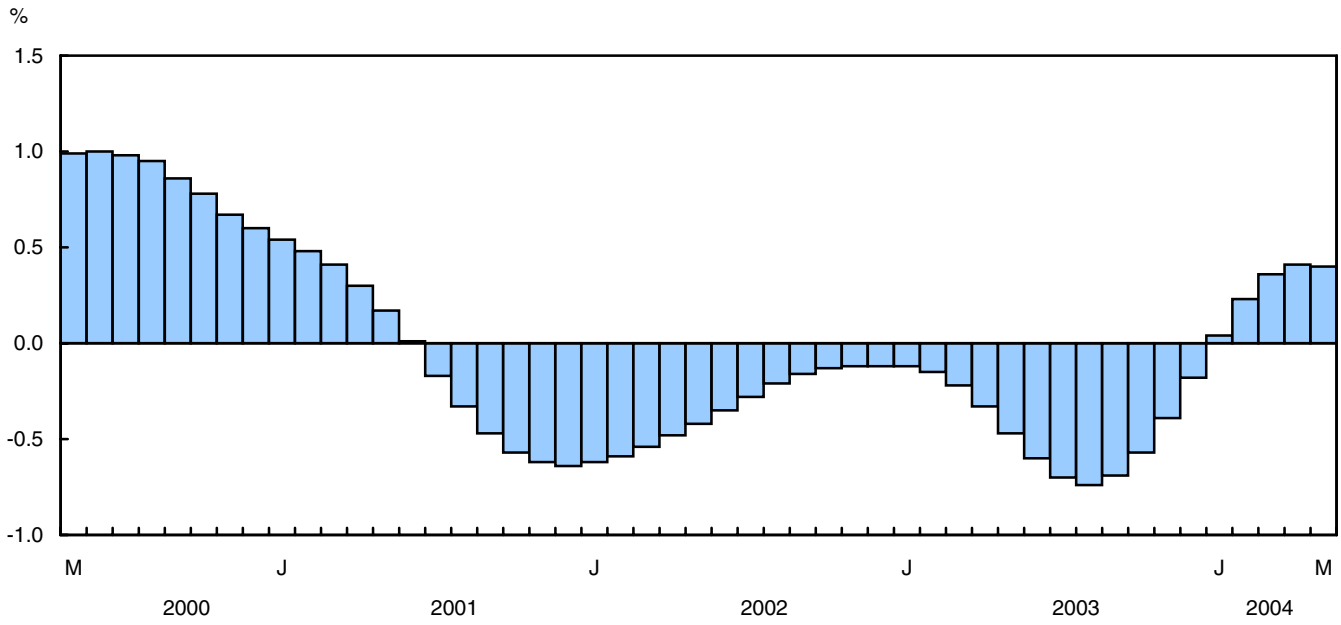


Chart 8

Shipments - Monthly change in trend

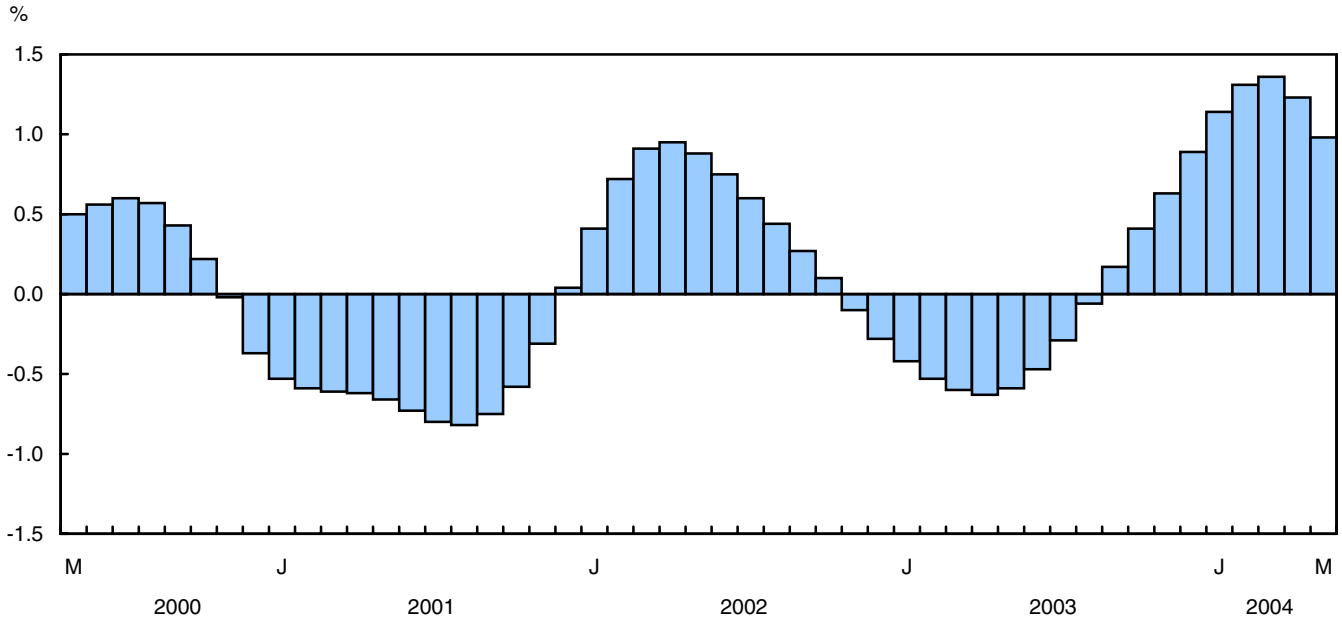
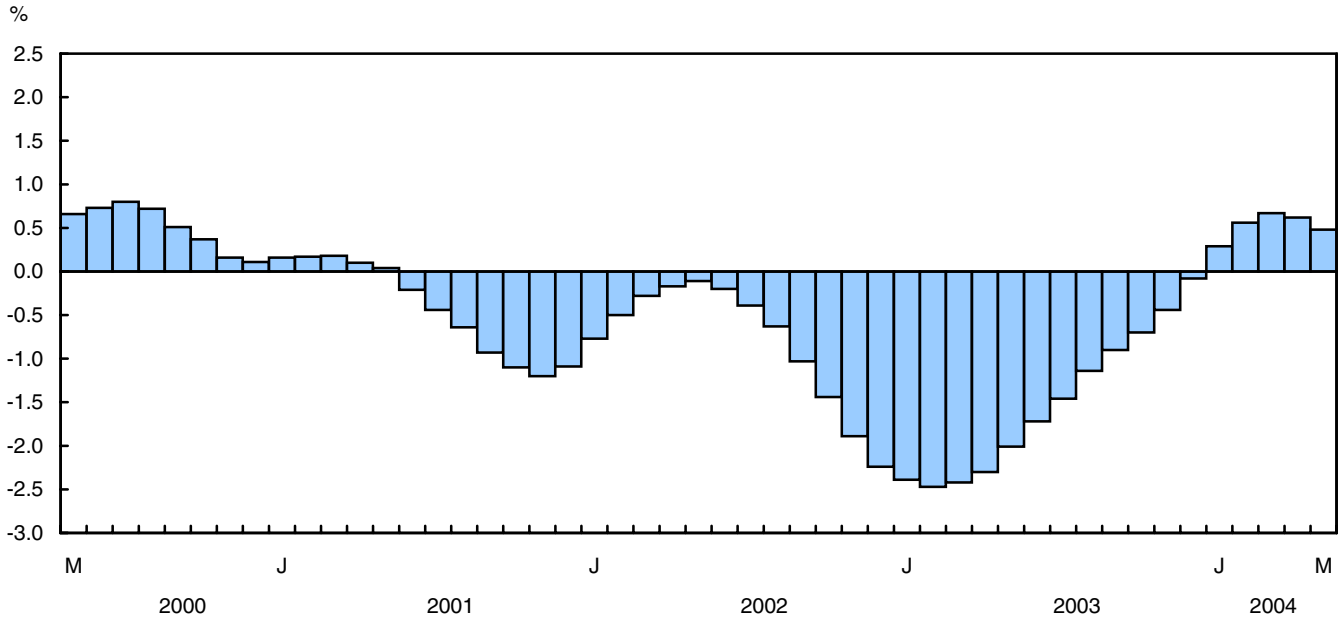


Chart 9

Unfilled orders - Monthly change in trend



Note to readers

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

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

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

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

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

Related products

Selected publications from Statistics Canada

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

A note on CANSIM

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

Selected CANSIM tables from Statistics Canada

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

Selected surveys from Statistics Canada

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

Selected tables of Canadian statistics from Statistics Canada

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

Statistical Tables

Table 1-1

All manufacturing industries - Shipments, inventories and orders

Period	Unadjusted				Seasonally adjusted			
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders
	$ millions							
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	43,757	59,751	36,284	44,493	46,355	58,671	36,346	46,770
March 2004	52,103	60,056	36,341	52,160	48,254	58,780	36,372	48,280
April 2004	49,382	60,341	37,137	50,179	48,575	59,369	37,223	49,426
May 2004	51,407	60,913	37,344	51,613	49,124	60,217	37,133	49,034

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
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	-0.1	-1.0	-0.7	1.38	1.33	-1.6	-1.1	-5.5	0.2
September 2003	5.8	0.2	-0.4	-0.7	1.29	1.32	1.1	-0.9	8.2	0.4
October 2003	-1.0	0.4	-0.9	-0.6	1.29	1.31	-2.3	-0.7	-3.7	0.6
November 2003	-0.8	0.6	-0.1	-0.4	1.30	1.29	-2.2	-0.4	-0.7	0.8
December 2003	1.5	0.9	-0.7	-0.2	1.28	1.28	-0.5	-0.1	2.9	1.2
January 2004	0.3	1.1	0.5	0.0	1.28	1.26	2.6	0.3	2.7	1.4
February 2004	1.2	1.3	0.2	0.2	1.27	1.25	1.2	0.6	0.1	1.5
March 2004	4.1	1.4	0.2	0.4	1.22	1.24	0.1	0.7	3.2	1.4
April 2004	0.7	1.2	1.0	0.4	1.22	1.23	2.3	0.6	2.4	1.2
May 2004	1.1	1.0	1.4	0.4	1.23	1.22	-0.2	0.5	-0.8	0.9

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							
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	8,329	3,276	1,872	8,380	8,128	3,214	1,859	8,185
March 2004	10,209	3,440	1,970	10,306	8,681	3,369	1,977	8,799
April 2004	9,557	3,563	2,036	9,623	8,787	3,507	2,092	8,903
May 2004	9,534	3,530	2,075	9,573	8,858	3,473	2,120	8,886

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
May 2003	-0.4	-0.9	-1.1	-0.2	0.38	0.37	-3.5	-1.5	-0.6	-0.9
June 2003	-2.2	-1.0	-1.5	-0.4	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	0.0	7.0	-0.7
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	-0.3	-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	0.4	-0.8	1.0	0.37	0.38	2.0	3.3	3.0	0.5
January 2004	-0.1	0.8	-0.1	1.4	0.37	0.39	2.1	3.6	-0.1	0.9
February 2004	-1.1	1.2	4.9	1.8	0.40	0.39	3.2	3.7	-0.9	1.3
March 2004	6.8	1.5	4.8	1.9	0.39	0.39	6.4	3.5	7.5	1.5
April 2004	1.2	1.5	4.1	1.8	0.40	0.39	5.9	3.0	1.2	1.4
May 2004	0.8	1.2	-1.0	1.6	0.39	0.39	1.3	2.4	-0.2	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							
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	35,428	56,475	34,412	36,113	38,228	55,457	34,487	38,585
March 2004	41,894	56,616	34,371	41,853	39,573	55,410	34,395	39,481
April 2004	39,825	56,778	35,101	40,556	39,788	55,862	35,130	40,523
May 2004	41,873	57,383	35,268	42,040	40,266	56,744	35,012	40,148

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
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	-0.2	-0.6	-0.7	1.55	1.56	-1.5	-1.5	0.7	0.1
August 2003	-2.3	0.1	-0.8	-0.8	1.57	1.54	-1.8	-1.2	-2.6	0.4
September 2003	4.2	0.3	-0.6	-0.7	1.50	1.53	1.1	-1.0	7.1	0.5
October 2003	-1.1	0.6	-0.9	-0.6	1.50	1.51	-2.6	-0.8	-4.5	0.7
November 2003	-0.2	0.8	0.0	-0.4	1.50	1.49	-2.4	-0.6	0.0	1.0
December 2003	1.2	1.0	-0.7	-0.2	1.48	1.47	-0.7	-0.3	2.9	1.3
January 2004	0.4	1.2	0.5	0.0	1.48	1.46	2.6	0.1	3.3	1.5
February 2004	1.7	1.3	-0.1	0.1	1.45	1.44	1.0	0.4	0.3	1.6
March 2004	3.5	1.3	-0.1	0.3	1.40	1.42	-0.3	0.5	2.3	1.4
April 2004	0.5	1.2	0.8	0.3	1.40	1.41	2.1	0.5	2.6	1.2
May 2004	1.2	0.9	1.6	0.3	1.41	1.40	-0.3	0.4	-0.9	0.8

Table 4-1

Shipments by major group and selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% change from 2003	2004	% change from 2002	2003
		$millions									
Food manufacturing	311	5,963	5,434	5,588	5,011	5,500	5,134	7.0	27,016	1.7	63,436
Beverage and tobacco product manufacturing	312	1,106	960	990	784	1,079	952	1.5	4,575	3.2	12,032
Textile mills	313	296	282	300	261	309	303	-6.0	1,391	-11.0	3,421
Textile product mills	314	192	193	190	168	217	198	-7.1	912	-10.3	2,297
Clothing manufacturing	315	517	562	597	547	560	600	-6.8	2,740	-6.3	7,075
Leather and allied product manufacturing	316	45	46	53	48	54	51	-10.1	238	-13.7	743
Wood product manufacturing	321	3,472	3,254	3,184	2,603	2,666	2,593	18.0	14,787	-3.4	31,248
Paper manufacturing	322	2,839	2,713	2,913	2,566	2,839	2,907	-4.5	13,577	-3.6	33,204
Printing and related support activities	323	991	988	1,075	897	980	996	-0.5	4,802	-0.7	11,590
Petroleum and coal products manufacturing	324	3,715	3,318	3,491	3,207	2,896	2,899	4.1	16,903	9.0	37,355
Chemical manufacturing	325	4,189	3,853	3,971	3,326	3,894	3,553	4.1	18,639	3.6	41,187
Plastics and rubber products manufacturing	326	2,274	2,235	2,309	1,933	2,222	2,187	1.5	10,558	1.0	24,722
Non-metallic mineral product manufacturing	327	1,143	1,012	912	732	1,106	944	4.7	4,454	5.3	11,994
Primary metal manufacturing	331	3,765	3,741	4,088	3,313	3,108	3,146	13.4	18,175	2.3	37,606
Fabricated metal product manufacturing	332	2,889	2,777	2,924	2,423	2,633	2,561	6.0	13,257	0.4	31,026
Machinery manufacturing	333	2,263	2,259	2,390	1,990	2,194	2,105	2.4	10,884	-2.9	25,576
Computer and electronic product manufacturing	334	1,636	1,481	2,065	1,540	1,430	1,352	10.8	8,090	-13.1	18,790
Electrical equipment, appliance and component manufacturing	335	881	882	962	820	850	815	4.6	4,300	-5.7	9,984
Transportation equipment manufacturing	336	11,317	11,538	12,112	9,920	11,220	10,905	0.3	54,662	-3.9	120,949
Motor vehicle manufacturing	3361	6,621	6,579	7,031	5,609	6,662	6,505	-2.9	31,098	-6.4	69,258
Motor vehicle body and trailer manufacturing	3362	361	332	331	282	357	336	-3.0	1,590	0.1	3,695
Motor vehicle parts manufacturing	3363	2,913	2,978	3,178	2,720	2,726	2,670	5.0	14,315	-0.1	31,433
Aerospace product and parts manufacturing	3364	979	1,214	1,102	870	1,042	994	9.0	5,407	1.5	11,586
Railroad rolling stock manufacturing	3365	201	194	189	191	212	192	-15.7	941	-7.7	2,370
Ship and boat building	3366	122	117	111	103	141	99	4.6	542	-5.4	1,100
Furniture and related product manufacturing	337	1,192	1,177	1,261	1,093	1,191	1,171	1.0	5,869	1.2	14,035
Miscellaneous manufacturing	339	722	675	729	576	617	607	8.3	3,227	3.5	7,495
Non-durable goods industries [1]		**22,127**	**20,585**	**21,476**	**18,748**	**20,549**	**19,779**	**2.4**	**101,352**	**1.5**	**237,062**
Durable goods industries [2]		**29,280**	**28,797**	**30,627**	**25,008**	**27,015**	**26,199**	**5.4**	**137,704**	**-2.6**	**308,703**
Manufacturing		**51,407**	**49,382**	**52,103**	**43,757**	**47,564**	**45,978**	**4.1**	**239,056**	**-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 April	Current periods				Change from previous month			Trend change from previous month			
			May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2004	Apr. 2004	Mar. 2004	May 2004	Apr. 2004	Mar. 2004	Feb. 2004
			$ millions				percentage						
Food manufacturing	311	42	5,687	5,646	5,649	5,517	0.7	-0.1	2.4	0.4	0.6	0.8	0.9
Beverage and tobacco product manufacturing	312	29	1,027	997	1,024	980	2.9	-2.6	4.4	0.1	0.1	0.0	-0.1
Textile mills	313	2	275	273	277	271	0.7	-1.5	2.2	-0.2	-0.2	-0.2	-0.2
Textile product mills	314	-5	180	185	182	180	-2.5	1.3	1.2	-0.3	-0.3	-0.2	-0.2
Clothing manufacturing	315	-5	553	558	551	542	-0.9	1.4	1.5	-0.4	-0.7	-0.8	-0.8
Leather and allied product manufacturing	316	-5	54	59	58	60	-7.8	1.8	-3.7	-1.5	-1.6	-1.5	-1.2
Wood product manufacturing	321	53	3,176	3,124	2,991	2,818	1.7	4.4	6.1	2.2	2.8	3.0	2.7
Paper manufacturing	322	119	2,838	2,719	2,774	2,674	4.4	-2.0	3.8	1.1	1.3	1.3	1.0
Printing and related support activities	323	30	1,003	973	965	972	3.1	0.8	-0.7	0.7	0.8	0.8	0.7
Petroleum and coal products manufacturing	324	285	3,766	3,481	3,423	3,327	8.2	1.7	2.9	3.0	3.5	3.7	3.5
Chemical manufacturing	325	56	3,721	3,665	3,648	3,532	1.5	0.5	3.3	1.0	1.2	1.4	1.5
Plastics and rubber products manufacturing	326	-13	2,095	2,108	2,146	2,066	-0.6	-1.8	3.9	0.0	0.2	0.3	0.3
Non-metallic mineral product manufacturing	327	-19	1,037	1,056	1,056	1,036	-1.8	0.1	1.9	0.4	0.6	0.9	1.0
Primary metal manufacturing	331	-4	3,659	3,662	3,642	3,413	-0.1	0.6	6.7	1.2	1.8	2.2	2.4
Fabricated metal product manufacturing	332	16	2,799	2,784	2,774	2,643	0.6	0.4	4.9	0.7	1.0	1.2	1.2
Machinery manufacturing	333	22	2,241	2,218	2,149	2,123	1.0	3.2	1.2	0.8	0.8	0.7	0.5
Computer and electronic product manufacturing	334	-26	1,651	1,676	1,765	1,701	-1.5	-5.0	3.7	-0.4	0.0	0.6	1.2
Electrical equipment, appliance and component manufacturing	335	1	865	864	859	859	0.1	0.6	0.0	0.2	0.3	0.4	0.5
Transportation equipment manufacturing	336	-41	10,607	10,649	10,465	9,870	-0.4	1.8	6.0	1.1	1.3	1.3	1.1
Motor vehicle manufacturing	3361	75	6,056	5,981	5,901	5,447	1.3	1.3	8.3	1.5	1.7	1.7	1.4
Motor vehicle body and trailer manufacturing	3362	12	317	305	295	302	4.1	3.2	-2.4	0.8	0.8	0.6	0.3
Motor vehicle parts manufacturing	3363	-4	2,802	2,806	2,780	2,680	-0.1	0.9	3.7	0.7	0.9	1.0	0.9
Aerospace product and parts manufacturing	3364	-112	1,027	1,139	1,065	1,002	-9.8	7.0	6.3	0.4	0.8	1.2	1.4
Railroad rolling stock manufacturing	3365	-8	195	203	163	193	-3.9	24.5	-15.4	2.1	1.6	1.2	1.0
Ship and boat building	3366	0	91	91	92	100	-0.1	-1.1	-8.6	-0.5	-0.7	-0.6	-0.2
Furniture and related product manufacturing	337	8	1,189	1,181	1,177	1,155	0.7	0.3	1.9	0.2	0.2	0.3	0.3
Miscellaneous manufacturing	339	4	700	696	682	616	0.6	2.1	10.6	1.7	2.0	2.0	1.7
Non-durable goods industries [1]		**535**	**21,199**	**20,664**	**20,696**	**20,121**	**2.6**	**-0.2**	**2.9**	**1.0**	**1.2**	**1.3**	**1.3**
Durable goods industries [2]		**14**	**27,925**	**27,911**	**27,558**	**26,234**	**0.1**	**1.3**	**5.0**	**1.0**	**1.2**	**1.4**	**1.3**
Manufacturing		**549**	**49,124**	**48,575**	**48,254**	**46,355**	**1.1**	**0.7**	**4.1**	**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 5-1

Inventories by major group and selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Average per month	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% change from 2003	Average 2004	% change from 2002	2003
		$millions									
Food manufacturing	311	4,726	4,708	4,705	4,619	4,434	4,438	3.2	4,667	0.2	4,564
Beverage and tobacco product manufacturing	312	1,666	1,679	1,692	1,652	1,709	1,706	-1.8	1,657	2.7	1,650
Textile mills	313	472	472	470	469	535	536	-11.8	471	-8.0	519
Textile product mills	314	361	357	359	353	379	384	-4.9	357	-4.2	365
Clothing manufacturing	315	1,305	1,318	1,320	1,345	1,480	1,473	-8.6	1,329	0.9	1,451
Leather and allied product manufacturing	316	137	126	120	118	153	144	-11.5	124	-9.8	141
Wood product manufacturing	321	4,408	4,684	5,153	4,948	4,689	5,136	-7.7	4,732	-0.9	4,533
Paper manufacturing	322	3,595	3,584	3,531	3,523	3,670	3,681	-2.5	3,544	-1.1	3,588
Printing and related support activities	323	850	860	867	863	875	894	-1.4	857	-2.4	870
Petroleum and coal products manufacturing	324	2,300	2,295	2,217	2,085	1,939	2,116	7.5	2,179	0.8	2,009
Chemical manufacturing	325	6,079	6,233	6,235	6,132	5,822	5,918	7.8	6,129	9.3	5,652
Plastics and rubber products manufacturing	326	2,408	2,361	2,332	2,318	2,382	2,386	0.2	2,340	4.4	2,279
Non-metallic mineral product manufacturing	327	1,157	1,170	1,155	1,156	1,171	1,177	0.1	1,156	-0.2	1,125
Primary metal manufacturing	331	4,769	4,533	4,504	4,627	5,066	4,987	-8.4	4,624	-1.5	4,902
Fabricated metal product manufacturing	332	3,795	3,741	3,609	3,568	3,854	3,843	-3.7	3,648	1.3	3,676
Machinery manufacturing	333	4,730	4,593	4,514	4,532	4,632	4,559	-0.3	4,564	-3.2	4,522
Computer and electronic product manufacturing	334	4,036	3,935	3,854	4,171	4,529	4,541	-11.8	4,034	-11.3	4,398
Electrical equipment, appliance and component manufacturing	335	1,917	1,848	1,804	1,812	1,943	2,026	-5.9	1,832	-2.8	1,870
Transportation equipment manufacturing	336	9,727	9,308	9,109	8,983	9,929	10,233	-9.6	9,132	-17.9	9,637
Motor vehicle manufacturing	3361	1,574	1,647	1,522	1,401	1,360	1,341	10.3	1,484	-8.6	1,288
Motor vehicle body and trailer manufacturing	3362	447	463	458	437	477	500	-10.2	444	12.3	466
Motor vehicle parts manufacturing	3363	1,955	1,916	1,918	1,875	1,863	1,895	1.5	1,896	13.1	1,847
Aerospace product and parts manufacturing	3364	4,703	4,293	4,240	4,320	5,017	5,255	-16.5	4,313	-30.5	4,875
Railroad rolling stock manufacturing	3365	793	741	715	673	922	949	-21.9	734	-7.5	876
Ship and boat building	3366	108	109	115	126	120	138	-14.7	117	-1.8	129
Furniture and related product manufacturing	337	1,210	1,213	1,217	1,199	1,260	1,269	-5.1	1,205	2.7	1,238
Miscellaneous manufacturing	339	1,265	1,323	1,289	1,276	1,228	1,246	3.8	1,280	4.1	1,217
Non-durable goods industries [1]		**23,899**	**23,994**	**23,847**	**23,479**	**23,379**	**23,677**	**1.7**	**23,652**	**2.3**	**23,087**
Durable goods industries [2]		**37,014**	**36,347**	**36,209**	**36,271**	**38,300**	**39,017**	**-6.7**	**36,207**	**-7.1**	**37,118**
Manufacturing		**60,913**	**60,341**	**60,056**	**59,751**	**61,680**	**62,694**	**-3.6**	**59,859**	**-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 April	Current periods				Change from previous month			Trend change from previous month			
			May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2004	Apr. 2004	Mar. 2004	May 2004	Apr. 2004	Mar. 2004	Feb. 2004
		$ millions					percentage						
Food manufacturing	311	12	4,799	4,787	4,735	4,676	0.3	1.1	1.3	0.5	0.7	0.8	0.8
Beverage and tobacco product manufacturing	312	-11	1,611	1,622	1,641	1,640	-0.7	-1.1	0.1	-0.2	-0.2	-0.2	-0.2
Textile mills	313	2	471	468	466	457	0.5	0.5	1.9	0.1	-0.2	-0.6	-1.1
Textile product mills	314	5	358	353	353	350	1.5	0.0	0.9	0.4	0.3	0.1	-0.1
Clothing manufacturing	315	-22	1,291	1,313	1,333	1,361	-1.7	-1.5	-2.0	-1.2	-1.4	-1.5	-1.5
Leather and allied product manufacturing	316	0	127	126	127	130	0.4	-0.6	-2.2	-0.1	-0.4	-0.7	-0.9
Wood product manufacturing	321	83	4,405	4,322	4,349	4,363	1.9	-0.6	-0.3	0.6	0.5	0.4	0.3
Paper manufacturing	322	8	3,513	3,504	3,477	3,485	0.2	0.8	-0.2	0.0	-0.1	-0.2	-0.3
Printing and related support activities	323	6	862	856	847	862	0.7	1.0	-1.7	0.1	0.0	-0.1	-0.2
Petroleum and coal products manufacturing	324	91	2,278	2,187	2,113	2,066	4.2	3.5	2.3	1.5	1.8	1.9	1.7
Chemical manufacturing	325	26	5,983	5,957	5,979	5,956	0.4	-0.4	0.4	0.2	0.3	0.4	0.6
Plastics and rubber products manufacturing	326	40	2,340	2,300	2,281	2,278	1.8	0.8	0.1	0.6	0.6	0.5	0.4
Non-metallic mineral product manufacturing	327	-10	1,111	1,120	1,114	1,095	-0.9	0.6	1.7	-0.2	-0.3	-0.3	-0.3
Primary metal manufacturing	331	182	4,818	4,636	4,623	4,689	3.9	0.3	-1.4	0.5	0.5	0.4	0.2
Fabricated metal product manufacturing	332	25	3,732	3,706	3,582	3,545	0.7	3.5	1.0	1.0	1.1	1.0	0.8
Machinery manufacturing	333	104	4,662	4,558	4,540	4,542	2.3	0.4	0.0	0.6	0.7	0.7	0.6
Computer and electronic product manufacturing	334	61	3,977	3,916	3,935	4,003	1.6	-0.5	-1.7	-0.2	-0.5	-0.9	-1.2
Electrical equipment, appliance and component manufacturing	335	66	1,885	1,819	1,788	1,793	3.6	1.7	-0.3	0.4	0.5	0.4	0.3
Transportation equipment manufacturing	336	235	9,536	9,301	9,030	8,938	2.5	3.0	1.0	0.7	0.7	0.5	0.3
Motor vehicle manufacturing	3361	-74	1,525	1,599	1,475	1,359	-4.6	8.4	8.6	2.4	3.0	3.3	3.4
Motor vehicle body and trailer manufacturing	3362	0	444	444	434	427	0.1	2.3	1.6	0.8	0.7	0.5	0.1
Motor vehicle parts manufacturing	3363	41	1,948	1,908	1,894	1,855	2.1	0.7	2.1	0.9	1.0	0.8	0.6
Aerospace product and parts manufacturing	3364	219	4,579	4,361	4,257	4,338	5.0	2.4	-1.9	0.1	0.0	-0.2	-0.5
Railroad rolling stock manufacturing	3365	52	793	741	715	673	7.1	3.6	6.2	0.7	0.6	-0.1	-1.4
Ship and boat building	3366	2	112	110	113	120	1.7	-2.3	-6.0	-2.0	-2.0	-1.8	-1.6
Furniture and related product manufacturing	337	-8	1,199	1,207	1,203	1,195	-0.7	0.3	0.7	0.1	0.0	0.0	-0.1
Miscellaneous manufacturing	339	-49	1,261	1,310	1,265	1,248	-3.8	3.5	1.4	0.6	0.8	0.9	1.0
Non-durable goods industries [1]		**159**	**23,632**	**23,473**	**23,351**	**23,260**	**0.7**	**0.5**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**
Durable goods industries [2]		**689**	**36,585**	**35,896**	**35,429**	**35,412**	**1.9**	**1.3**	**0.0**	**0.4**	**0.4**	**0.3**	**0.1**
Manufacturing		**848**	**60,217**	**59,369**	**58,780**	**58,671**	**1.4**	**1.0**	**0.2**	**0.4**	**0.4**	**0.4**	**0.2**

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	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$millions									
Textile mills	313	227	213	207	207	229	244	-16.2	214	-20.6	233
Textile product mills	314	88	92	89	86	84	97	-9.9	88	6.6	86
Clothing manufacturing	315	207	199	195	176	237	238	-10.8	189	3.6	199
Leather and allied product manufacturing	316	24	24	28	19	34	33	-14.0	24	-2.2	28
Plastics and rubber products manufacturing	326	433	455	431	367	371	362	9.0	408	1.9	366
Primary metal manufacturing	331	1,870	1,851	1,887	1,856	1,771	1,794	2.3	1,838	-2.8	1,757
Fabricated metal product manufacturing	332	4,185	4,102	3,785	3,663	3,497	3,565	7.9	3,843	-1.7	3,522
Machinery manufacturing	333	4,988	4,786	4,665	4,483	4,311	4,512	3.4	4,673	-14.5	4,380
Computer and electronic product manufacturing	334	3,057	3,094	3,082	3,161	3,614	3,589	-14.7	3,160	-5.5	3,483
Electrical equipment, appliance and component manufacturing	335	892	870	879	876	938	947	-8.8	870	-3.5	901
Transportation equipment manufacturing	336	18,644	18,770	18,464	18,891	20,504	20,693	-13.4	18,616	-26.7	20,074
Motor vehicle manufacturing	3361	871	814	750	637	521	557	26.8	743	-25.1	566
Motor vehicle body and trailer manufacturing	3362	491	504	498	465	446	453	1.9	478	-1.5	430
Motor vehicle parts manufacturing	3363	1,204	1,222	1,220	1,236	1,033	1,018	13.7	1,212	25.4	1,093
Aerospace product and parts manufacturing	3364	11,886	11,895	11,856	12,418	13,632	13,691	-17.3	11,950	-34.2	13,167
Ship and boat building	3366	45	51	56	65	110	115	-27.7	55	230.1	83
Miscellaneous manufacturing	339	179	188	181	170	151	143	16.7	175	-13.4	162
Non-durable goods industries [1]		**2,036**	**2,011**	**1,982**	**1,849**	**1,898**	**1,967**	**-2.1**	**1,941**	**7.1**	**2,029**
Durable goods industries [2]		**35,307**	**35,126**	**34,358**	**34,435**	**36,127**	**36,592**	**-7.7**	**34,590**	**-18.7**	**35,629**
Manufacturing		**37,344**	**37,137**	**36,341**	**36,284**	**38,025**	**38,560**	**-7.4**	**36,531**	**-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 April	Current periods				Change from previous month			Trend change from previous month			
			May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2004	Apr. 2004	Mar. 2004	May 2004	Apr. 2004	Mar. 2004	Feb. 2004
		$ millions					percentage						
Textile mills	313	19	228	209	199	198	9.2	5.1	0.6	-0.1	-0.3	-0.5	-0.8
Textile product mills	314	4	88	85	84	83	4.2	0.4	1.8	1.6	1.6	1.3	1.2
Clothing manufacturing	315	2	179	177	185	182	1.2	-4.2	1.6	-0.4	-0.7	-1.1	-1.3
Leather and allied product manufacturing	316	-2	18	20	26	24	-10.0	-24.2	7.4	-7.9	-8.8	-8.3	-6.8
Plastics and rubber products manufacturing	326	-22	427	449	426	381	-4.9	5.3	11.8	1.8	2.5	2.9	3.0
Primary metal manufacturing	331	22	1,799	1,777	1,820	1,792	1.2	-2.4	1.6	0.1	0.2	0.2	0.3
Fabricated metal product manufacturing	332	83	4,185	4,102	3,785	3,663	2.0	8.4	3.3	2.1	2.5	2.5	2.3
Machinery manufacturing	333	203	4,988	4,786	4,665	4,483	4.2	2.6	4.1	0.9	1.2	1.5	1.7
Computer and electronic product manufacturing	334	-37	3,057	3,094	3,082	3,161	-1.2	0.4	-2.5	-0.8	-0.9	-1.0	-1.1
Electrical equipment, appliance and component manufacturing	335	21	892	870	879	876	2.4	-1.0	0.4	0.9	1.1	1.1	0.8
Transportation equipment manufacturing	336	-429	18,562	18,991	18,579	18,989	-2.3	2.2	-2.2	0.2	0.3	0.4	0.3
Motor vehicle manufacturing	3361	57	871	814	750	637	6.9	8.6	17.8	4.8	5.9	6.7	7.1
Motor vehicle body and trailer manufacturing	3362	3	483	480	473	438	0.7	1.5	8.0	1.9	2.3	2.5	2.4
Motor vehicle parts manufacturing	3363	-28	1,250	1,278	1,227	1,222	-2.2	4.2	0.4	0.9	1.3	1.6	1.9
Aerospace product and parts manufacturing	3364	-316	11,771	12,087	11,989	12,555	-2.6	0.8	-4.5	0.0	0.2	0.3	0.3
Ship and boat building	3366	-6	41	47	55	67	-13.5	-14.7	-17.4	-9.4	-10.4	-10.2	-9.5
Miscellaneous manufacturing	339	-8	180	187	183	173	-4.0	2.5	5.8	0.3	0.7	1.0	1.0
Non-durable goods industries [1]		**29**	**1,996**	**1,966**	**1,952**	**1,861**	**1.5**	**0.7**	**4.9**	**1.2**	**1.1**	**0.6**	**-0.1**
Durable goods industries [2]		**-120**	**35,137**	**35,256**	**34,420**	**34,485**	**-0.3**	**2.4**	**-0.2**	**0.4**	**0.6**	**0.7**	**0.6**
Manufacturing		**-90**	**37,133**	**37,223**	**36,372**	**36,346**	**-0.2**	**2.3**	**0.1**	**0.5**	**0.6**	**0.7**	**0.6**

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

Table 7-1

New orders by selected major group and industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	2004	% Change from 2002	2003
		$millions									
Textile mills	313	310	288	299	254	294	294	-1.8	1,411	-13.6	3,356
Textile product mills	314	188	195	193	170	204	192	-5.9	927	-11.2	2,290
Clothing manufacturing	315	525	566	615	556	559	607	-7.3	2,790	-6.4	7,066
Leather and allied product manufacturing	316	45	43	62	44	55	55	-14.6	238	-12.6	747
Plastics and rubber products manufacturing	326	2,252	2,259	2,372	1,949	2,231	2,167	2.6	10,656	0.1	24,666
Primary metal manufacturing	331	3,784	3,706	4,119	3,444	3,085	3,153	14.6	18,339	0.8	37,522
Fabricated metal product manufacturing	332	2,972	3,094	3,045	2,607	2,565	2,496	10.9	13,972	0.7	31,096
Machinery manufacturing	333	2,466	2,379	2,573	2,028	1,992	1,978	11.2	11,509	-0.7	25,351
Computer and electronic product manufacturing	334	1,598	1,493	1,986	1,293	1,455	1,197	11.9	7,969	-17.1	18,169
Electrical equipment, appliance and component manufacturing	335	902	873	966	865	841	816	7.1	4,384	-6.8	9,835
Transportation equipment manufacturing	336	11,191	11,845	11,685	10,500	11,031	10,088	10.1	55,384	-6.3	114,188
Motor vehicle manufacturing	3361	6,677	6,644	7,144	5,602	6,625	6,471	-1.5	31,376	-6.5	69,172
Motor vehicle body and trailer manufacturing	3362	347	339	364	314	350	323	3.3	1,705	-2.2	3,637
Motor vehicle parts manufacturing	3363	2,895	2,979	3,162	2,778	2,740	2,614	5.4	14,315	-1.0	31,557
Aerospace product and parts manufacturing	3364	971	1,253	540	1,590	984	194	398.3	5,769	-17.0	5,676
Ship and boat building	3366	117	112	102	108	136	155	-12.5	523	-3.2	1,134
Miscellaneous manufacturing	339	714	681	741	589	625	605	9.1	3,248	4.1	7,498
Non-durable goods industries [1]		**22,152**	**20,613**	**21,609**	**18,772**	**20,479**	**19,718**	**2.7**	**101,653**	**1.4**	**236,934**
Durable goods industries [2]		**29,461**	**29,565**	**30,550**	**25,721**	**26,550**	**25,078**	**11.0**	**140,094**	**-3.8**	**301,074**
Manufacturing		**51,613**	**50,179**	**52,160**	**44,493**	**47,029**	**44,795**	**7.3**	**241,747**	**-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 April	Current periods				Change from previous month			Trend change from previous month			
			May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2004	Apr. 2004	Mar. 2004	May 2004	Apr. 2004	Mar. 2004	Feb. 2004
		$ millions					percentage						
Textile mills	313	11	294	283	278	257	3.9	1.7	8.3	0.0	0.0	0.0	-0.1
Textile product mills	314	-1	183	185	184	179	-0.8	0.7	2.4	-0.2	-0.2	-0.1	-0.2
Clothing manufacturing	315	5	555	550	553	543	0.9	-0.5	2.0	-0.3	-0.5	-0.7	-0.7
Leather and allied product manufacturing	316	0	52	53	60	53	-0.5	-11.8	11.4	-0.9	-1.5	-2.1	-2.2
Plastics and rubber products manufacturing	326	-58	2,074	2,131	2,191	2,080	-2.7	-2.7	5.3	-0.1	0.1	0.3	0.4
Primary metal manufacturing	331	61	3,680	3,619	3,670	3,449	1.7	-1.4	6.4	1.2	1.8	2.2	2.4
Fabricated metal product manufacturing	332	-219	2,882	3,101	2,895	2,827	-7.1	7.1	2.4	0.3	1.0	1.5	1.9
Machinery manufacturing	333	105	2,444	2,339	2,332	2,162	4.5	0.3	7.9	0.2	0.2	0.3	0.5
Computer and electronic product manufacturing	334	-74	1,613	1,688	1,686	1,455	-4.4	0.1	15.9	-0.1	0.2	0.7	1.2
Electrical equipment, appliance and component manufacturing	335	31	886	855	862	905	3.6	-0.8	-4.7	-0.1	0.3	0.7	0.9
Transportation equipment manufacturing	336	-883	10,178	11,061	10,054	10,302	-8.0	10.0	-2.4	0.8	1.1	1.5	1.7
Motor vehicle manufacturing	3361	67	6,113	6,045	6,014	5,440	1.1	0.5	10.6	1.4	1.7	1.7	1.5
Motor vehicle body and trailer manufacturing	3362	8	320	312	330	314	2.7	-5.5	5.0	0.2	0.6	0.8	0.9
Motor vehicle parts manufacturing	3363	-84	2,773	2,857	2,785	2,745	-2.9	2.6	1.5	0.5	0.8	0.9	0.9
Aerospace product and parts manufacturing	3364	-525	711	1,236	499	1,595	-42.5	147.9	-68.7	-1.8	-0.7	1.4	3.9
Ship and boat building	3366	2	84	82	80	97	2.0	3.2	-18.0	0.7	-0.2	-0.5	-0.2
Miscellaneous manufacturing	339	-8	693	700	691	624	-1.1	1.3	10.9	1.6	1.9	2.0	1.8
Non-durable goods industries [1]		**550**	**21,229**	**20,678**	**20,788**	**20,123**	**2.7**	**-0.5**	**3.3**	**1.0**	**1.3**	**1.4**	**1.4**
Durable goods industries [2]		**-943**	**27,805**	**28,748**	**27,492**	**26,647**	**-3.3**	**4.6**	**3.2**	**0.8**	**1.1**	**1.5**	**1.6**
Manufacturing		**-392**	**49,034**	**49,426**	**48,280**	**46,770**	**-0.8**	**2.4**	**3.2**	**0.9**	**1.2**	**1.4**	**1.5**

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

Table 8-1

Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	443	444	442	384	431	426	1.5	2,144	-1.9	5,099
Starch and vegetable fat and oil manufacturing	31122	308	321	354	262	271	260	20.4	1,513	11.4	3,117
Sugar and confectionery product manufacturing	3113	306	296	308	292	298	307	2.3	1,463	10.0	3,764
Fruit and vegetable preserving and specialty food manufacturing	3114	503	521	503	497	493	492	3.9	2,540	-0.9	5,974
Dairy product manufacturing	3115	986	945	959	863	955	898	6.9	4,626	9.8	10,958
Meat product manufacturing	3116	1,754	1,596	1,646	1,463	1,466	1,426	11.6	7,929	-3.9	17,027
Cookie, cracker and pasta manufacturing	31182	140	136	133	130	130	133	2.8	661	-2.1	1,577
Other food manufacturing	3119	425	394	434	381	426	410	4.3	1,994	4.1	4,936
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	313	261	278	220	324	280	-0.8	1,268	12.7	3,336
Breweries	31212	407	344	346	253	355	288	17.6	1,587	1.0	3,858
Wineries	31213	68	58	61	53	61	53	14.8	286	-2.6	706
Distilleries	31214	50	54	47	37	59	83	-34.5	231	-18.0	831
Tobacco manufacturing	3122	268	243	257	220	281	248	-5.7	1,204	5.1	3,301
313 Textile mills											
Fibre, yarn and thread mills	3131	55	50	54	48	47	49	3.9	248	-12.6	547
Fabric mills	3132	185	176	187	161	198	194	-8.5	866	-10.6	2,180
Textile and fabric finishing and fabric coating	3133	56	56	58	52	63	60	-5.7	277	-10.8	694
314 Textile product mills											
Carpet and rug mills	31411	69	70	69	66	79	75	-9.2	334	-8.6	824
Textile bag and canvas mills	31491	22	22	22	17	26	23	-8.2	98	-30.9	267
315 Clothing manufacturing											
Hosiery and sock mills	31511	33	34	35	36	42	37	-12.1	174	-5.1	511
Other clothing knitting mills	31519	48	46	45	41	41	42	6.5	220	-0.4	587
Men's and boys' cut and sew clothing manufacturing	31522	144	158	165	152	165	166	-8.9	774	-4.6	2,078
Women's and girls' cut and sew clothing manufacturing	31523	182	202	234	201	187	222	-7.6	985	-3.5	2,471
Clothing accessories and other clothing manufacturing	3159	24	25	22	21	26	22	-0.5	112	-4.1	289
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	18	19	25	25	23	20	-2.5	111	-17.7	401
321 Wood product manufacturing											
Sawmills and wood preservation	3211	1,710	1,558	1,552	1,250	1,301	1,303	12.4	7,157	-16.1	14,961
Veneer, plywood and engineered wood product manufacturing	3212	928	944	900	754	595	579	48.0	4,156	19.5	7,928
Other wood product manufacturing	3219	835	752	732	599	770	712	3.7	3,475	6.2	8,359
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	2,012	1,888	2,013	1,778	1,901	1,988	-2.5	9,435	-6.6	22,490
Paperboard container manufacturing	32221	428	429	455	396	481	471	-9.4	2,109	6.6	5,538
Paper bag and coated and treated paper manufacturing	32222	225	228	259	228	264	269	-12.6	1,166	0.8	3,033
Other converted paper product manufacturing	32229	133	130	144	126	149	136	-1.2	669	-2.7	1,624
323 Printing and related support activities											
Printing	32311	921	914	1,000	831	906	917	0.3	4,460	-1.5	10,730
Support activities for printing	32312	70	74	75	66	74	79	-9.8	342	10.5	860
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	3,491	3,142	3,298	3,040	2,686	2,726	4.2	15,956	10.6	34,729
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	295	275	291	249	257	244	9.0	1,374	12.8	3,023
Other basic organic chemical manufacturing	32519	315	317	347	295	281	294	3.6	1,574	-6.6	3,423
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	734	711	738	624	651	667	3.0	3,415	0.6	7,461
Pesticide and other agricultural chemical manufacturing	32532	92	103	101	62	70	77	32.1	402	21.2	444
Pharmaceutical and medicine manufacturing	3254	746	738	881	651	730	726	6.1	3,719	4.9	8,506
Paint and coating manufacturing	32551	193	191	195	159	186	173	6.4	876	3.5	2,028
Adhesive manufacturing	32552	77	65	70	56	77	69	2.5	323	8.4	772
Soap and cleaning compound manufacturing	32561	122	139	138	126	143	146	-13.8	645	-16.2	1,689
Toilet preparation manufacturing	32562	101	107	129	108	97	99	6.2	549	2.3	1,289
Printing ink manufacturing	32591	37	41	46	35	40	40	3.1	198	1.6	467
All other chemical product manufacturing	32599	338	350	375	333	330	332	2.8	1,719	2.8	3,989
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	190	175	172	136	173	166	4.5	784	2.5	1,836
Polystyrene foam product manufacturing	32614	55	56	55	37	46	41	15.0	239	7.3	561
Other plastic product manufacturing	32619	1,100	1,087	1,107	914	1,096	1,077	1.8	5,037	2.5	11,881

Table 8-1 – continued

Shipments for selected industries - Unadjusted

	NAICS Code	Current periods				Previous year		Year to date		Annual	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	2004	% Change from 2002	2003
Other rubber product manufacturing	32629	156	149	164	144	149	149	0.9	748	-11.6	1,750
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	71	62	64	46	71	64	-4.2	285	5.4	722
Glass and glass product manufacturing	3272	188	182	181	152	193	179	1.1	850	0.0	2,084
Cement manufacturing	32731	154	117	98	74	144	109	9.9	501	1.2	1,479
Ready-mix concrete manufacturing	32732	266	228	186	145	261	187	14.9	932	5.1	2,761
Other concrete product manufacturing	32739	112	89	76	59	95	69	15.2	390	9.6	1,143
Abrasive product manufacturing	32791	26	28	29	25	28	28	-12.5	125	-13.5	294
All other non-metallic mineral product manufacturing	32799	150	158	148	125	139	149	6.3	705	12.3	1,683
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	991	996	1,060	862	837	856	9.7	4,745	-1.3	9,877
Iron and steel pipes and tubes manufacturing from purchased steel	33121	265	239	346	273	214	203	17.8	1,418	6.2	2,908
Foundries	3315	260	266	301	259	275	266	-2.8	1,327	1.4	3,223
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	60	61	62	56	54	51	15.2	288	4.4	583
Plate work and fabricated structural product manufacturing	33231	454	429	438	363	358	365	11.8	2,016	4.6	4,928
Power boiler and heat exchanger manufacturing	33241	130	102	125	91	101	95	19.0	528	31.9	1,275
Spring and wire product manufacturing	3326	132	128	140	120	144	138	-10.2	635	-12.0	1,575
Coating, engraving, heat treating and allied activities	3328	288	286	314	248	261	274	2.7	1,370	-0.6	3,043
Other fabricated metal product manufacturing	3329	324	309	323	276	315	316	-1.8	1,465	-6.5	3,486
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	181	209	225	171	175	211	3.4	955	-12.0	1,956
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	210	216	202	192	186	206	6.5	1,015	-7.2	2,465
All other general-purpose machinery manufacturing	33399	193	175	224	158	191	197	-4.0	920	-1.9	2,336
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	240	163	307	202	235	202	-9.6	1,074	-22.7	3,046
Communications equipment manufacturing	3342	532	520	715	536	414	443	18.2	2,742	-20.2	6,180
Audio and video equipment manufacturing	3343	12	15	22	14	16	19	-10.9	78	-12.2	211
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	85	84	87	72	84	73	1.1	395	-9.3	968
Small electrical appliance manufacturing	33521	22	21	27	22	23	20	12.8	117	-1.7	263
Major appliance manufacturing	33522	177	171	174	142	161	162	4.1	802	-3.4	1,754
Battery manufacturing	33591	21	21	20	18	18	18	10.9	97	19.0	217
Communication and energy wire and cable manufacturing	33592	185	204	221	190	173	172	12.4	963	-14.5	2,170
All other electrical equipment and component manufacturing	33599	38	40	42	38	38	34	10.1	193	-0.1	429
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	6,621	6,579	7,031	5,609	6,662	6,505	-2.9	31,098	-6.4	69,258
Motor vehicle parts manufacturing	3363	2,913	2,978	3,178	2,720	2,726	2,670	5.0	14,315	-0.1	31,433
Aerospace product and parts manufacturing	3364	979	1,214	1,102	870	1,042	994	9.0	5,407	1.5	11,586
Railroad rolling stock manufacturing	3365	201	194	189	191	212	192	-15.7	941	-7.7	2,370
Ship and boat building	3366	122	117	111	103	141	99	4.6	542	-5.4	1,100
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	665	668	699	625	665	648	3.1	3,306	-1.3	7,751
Office furniture (including fixtures) manufacturing	3372	426	410	459	383	417	427	-2.5	2,089	5.3	5,107
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	224	240	276	220	186	176	29.4	1,160	10.7	2,287
Other miscellaneous manufacturing	3399	498	435	454	355	432	431	-0.8	2,067	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	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
		$ millions									
311 Food manufacturing											
Animal food manufacturing	3111	289	304	297	293	267	277	5.4	292	4.2	281
Starch and vegetable fat and oil manufacturing	31122	198	236	241	270	155	189	22.6	236	4.6	180
Sugar and confectionery product manufacturing	3113	314	296	294	286	299	288	0.0	297	5.0	310
Fruit and vegetable preserving and specialty food manufacturing	3114	855	860	859	861	797	798	4.9	865	5.3	853
Dairy product manufacturing	3115	881	894	886	880	815	807	6.0	878	-3.6	813
Meat product manufacturing	3116	833	820	813	770	759	816	-2.8	794	-5.5	797
Cookie, cracker and pasta manufacturing	31182	124	123	126	120	130	133	-6.5	123	7.1	128
Other food manufacturing	3119	489	480	489	471	443	428	11.4	481	2.9	455
312 Beverage and tobacco product manufacturing											
Soft drink and ice manufacturing	31211	271	270	248	227	280	261	-1.1	246	7.8	250
Breweries	31212	207	201	190	186	201	191	5.4	194	0.8	185
Wineries	31213	255	254	254	250	243	245	1.6	253	4.8	251
Distilleries	31214	496	499	476	476	552	554	-12.8	485	3.3	528
Tobacco manufacturing	3122	438	456	524	513	434	455	6.6	479	-1.1	434
313 Textile mills											
Fibre, yarn and thread mills	3131	60	60	61	61	68	68	-8.6	62	0.3	69
Fabric mills	3132	334	335	335	336	392	395	-14.6	335	-12.3	378
Textile and fabric finishing and fabric coating	3133	77	76	74	72	75	74	0.5	74	11.7	73
314 Textile product mills											
Carpet and rug mills	31411	89	87	88	88	105	108	-16.8	88	2.2	101
Textile bag and canvas mills	31491	40	39	38	37	45	46	-15.5	38	-32.1	42
315 Clothing manufacturing											
Hosiery and sock mills	31511	119	122	134	139	144	145	-4.8	130	6.8	142
Other clothing knitting mills	31519	172	163	157	149	184	175	-3.0	157	6.1	164
Men's and boys' cut and sew clothing manufacturing	31522	398	413	430	452	525	527	-17.2	428	6.1	507
Women's and girls' cut and sew clothing manufacturing	31523	405	406	389	396	398	389	-1.7	402	1.0	416
Clothing accessories and other clothing manufacturing	3159	60	60	59	62	63	62	4.6	61	8.0	62
316 Leather and allied product manufacturing											
Footwear manufacturing	3162	90	80	74	72	101	93	-12.5	77	-7.3	92
321 Wood product manufacturing											
Sawmills and wood preservation	3211	2,568	2,831	3,208	3,075	2,870	3,246	-11.2	2,880	-5.3	2,769
Veneer, plywood and engineered wood product manufacturing	3212	784	822	892	857	793	842	-2.1	827	5.4	761
Other wood product manufacturing	3219	1,056	1,031	1,053	1,017	1,026	1,048	-1.2	1,025	8.0	1,003
322 Paper manufacturing											
Pulp, paper and paperboard mills	3221	2,520	2,517	2,473	2,477	2,545	2,563	-2.2	2,486	-3.1	2,508
Paperboard container manufacturing	32221	487	480	480	468	499	494	-1.7	474	2.8	479
Paper bag and coated and treated paper manufacturing	32222	367	370	370	374	399	403	-6.2	374	4.9	391
Other converted paper product manufacturing	32229	145	144	138	138	152	153	-6.0	140	0.9	146
323 Printing and related support activities											
Printing	32311	818	827	833	832	842	855	-0.2	824	-0.5	832
Support activities for printing	32312	32	33	34	31	33	38	-23.9	33	-32.0	37
324 Petroleum and coal products manufacturing											
Petroleum refineries	32411	1,952	1,949	1,890	1,773	1,616	1,795	7.8	1,851	1.4	1,703
325 Chemical manufacturing											
Other basic inorganic chemical manufacturing	32518	265	272	265	250	247	246	10.4	260	8.7	243
Other basic organic chemical manufacturing	32519	338	341	362	329	363	365	-5.0	335	8.8	346
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	636	595	603	606	629	618	4.2	601	3.2	566
Pesticide and other agricultural chemical manufacturing	32532	68	102	112	100	80	87	15.5	96	29.1	84
Pharmaceutical and medicine manufacturing	3254	2,803	2,837	2,801	2,841	2,599	2,538	13.5	2,824	14.4	2,543
Paint and coating manufacturing	32551	263	280	281	277	279	286	0.8	274	2.8	268
Adhesive manufacturing	32552	104	106	104	104	92	95	13.0	103	12.8	95
Soap and cleaning compound manufacturing	32561	92	96	98	100	114	108	-13.7	96	-29.0	106
Toilet preparation manufacturing	32562	199	189	192	186	202	197	-2.8	191	8.6	194
Printing ink manufacturing	32591	85	83	88	87	71	72	17.7	84	12.0	74
All other chemical product manufacturing	32599	402	392	384	380	409	418	-7.1	386	1.3	399
326 Plastics and rubber products manufacturing											
Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	32612	372	374	354	343	362	372	-4.1	353	-8.5	340
Polystyrene foam product manufacturing	32614	64	60	60	55	56	56	3.7	59	16.6	54
Other plastic product manufacturing	32619	998	961	959	961	974	961	1.2	965	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	
		May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	Average 2004	% Change from 2002	2003
Other rubber product manufacturing	32629	135	140	136	134	146	148	-5.8	136	-12.9	138
327 Non-metallic mineral product manufacturing											
Clay product and refractory manufacturing	3271	75	77	75	74	85	83	-10.8	74	-8.1	76
Glass and glass product manufacturing	3272	247	254	251	253	257	256	-1.4	251	-2.1	252
Cement manufacturing	32731	195	201	203	210	198	206	-2.0	201	-6.8	182
Ready-mix concrete manufacturing	32732	82	81	81	84	88	86	-4.5	82	-7.7	87
Other concrete product manufacturing	32739	141	141	135	135	123	120	21.9	137	11.8	117
Abrasive product manufacturing	32791	50	49	49	49	66	68	-27.8	49	-19.4	61
All other non-metallic mineral product manufacturing	32799	124	124	129	130	131	134	-3.7	127	8.2	131
331 Primary metal manufacturing											
Iron and steel mills and ferro-alloy manufacturing	3311	1,713	1,584	1,610	1,746	1,983	1,961	-16.2	1,697	-1.8	1,950
Iron and steel pipes and tubes manufacturing from purchased steel	33121	507	468	432	474	530	522	-5.9	481	2.3	495
Foundries	3315	312	301	284	273	323	303	-4.2	289	1.6	291
332 Fabricated metal product manufacturing											
Cutlery and hand tool manufacturing	3322	85	84	84	83	82	85	-2.9	83	2.2	83
Plate work and fabricated structural product manufacturing	33231	778	768	701	665	727	714	4.3	714	-1.7	677
Power boiler and heat exchanger manufacturing	33241	90	92	90	89	105	107	-13.6	90	4.1	96
Spring and wire product manufacturing	3326	165	154	148	147	189	198	-24.0	151	-11.6	172
Coating, engraving, heat treating and allied activities	3328	174	172	169	176	165	182	-5.0	171	-1.9	169
Other fabricated metal product manufacturing	3329	600	608	607	597	582	583	4.7	604	6.5	579
333 Machinery manufacturing											
Agricultural implement manufacturing	33311	439	424	423	445	471	497	-14.7	434	1.2	474
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	324	319	314	304	338	330	-2.9	312	-7.2	324
All other general-purpose machinery manufacturing	33399	592	560	536	555	488	461	14.9	559	15.1	530
334 Computer and electronic product manufacturing											
Computer and peripheral equipment manufacturing	3341	561	574	562	562	686	662	-17.0	568	1.2	669
Communications equipment manufacturing	3342	2,117	2,068	2,038	2,294	2,458	2,471	-13.8	2,165	-12.2	2,387
Audio and video equipment manufacturing	3343	58	55	53	60	61	63	-9.2	57	5.0	59
335 Electrical equipment, appliance and component manufacturing											
Lighting fixture manufacturing	33512	132	131	134	143	136	145	-8.7	135	-9.1	141
Small electrical appliance manufacturing	33521	40	41	39	39	38	40	3.5	40	9.3	40
Major appliance manufacturing	33522	205	204	198	192	203	207	0.2	196	11.9	186
Battery manufacturing	33591	47	45	44	44	35	36	29.9	44	-10.8	37
Communication and energy wire and cable manufacturing	33592	847	783	769	786	841	889	-5.8	792	-0.1	808
All other electrical equipment and component manufacturing	33599	108	105	101	98	106	106	-1.8	102	-2.0	103
336 Transportation equipment manufacturing											
Motor vehicle manufacturing	3361	1,574	1,647	1,522	1,401	1,360	1,341	10.3	1,484	-8.6	1,288
Motor vehicle parts manufacturing	3363	1,955	1,916	1,918	1,875	1,863	1,895	1.5	1,896	13.1	1,847
Aerospace product and parts manufacturing	3364	4,703	4,293	4,240	4,320	5,017	5,255	-16.5	4,313	-30.5	4,875
Railroad rolling stock manufacturing	3365	793	741	715	673	922	949	-21.9	734	-7.5	876
Ship and boat building	3366	108	109	115	126	120	138	-14.7	117	-1.8	129
337 Furniture and related product manufacturing											
Household and institutional furniture and kitchen cabinet manufacturing	3371	774	770	778	762	816	821	-6.8	769	1.3	790
Office furniture (including fixtures) manufacturing	3372	322	333	328	324	328	330	-0.3	326	8.9	335
339 Miscellaneous manufacturing											
Medical equipment and supplies manufacturing	3391	308	299	291	305	241	238	26.0	302	13.0	255
Other miscellaneous manufacturing	3399	957	1,024	997	971	986	1,008	-1.5	978	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							
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	25,911	13,416	20,424	59,751	25,197	13,238	20,237	58,671
March 2004	26,038	13,312	20,706	60,056	25,446	13,221	20,113	58,780
April 2004	26,057	13,472	20,812	60,341	25,766	13,345	20,258	59,369
May 2004	26,047	13,871	20,995	60,913	26,134	13,560	20,523	60,217

Table 10

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	2004	% Change from 2002	2003
	$ millions									
Total										
Newfoundland and Labrador	271	207	199	178	245	177	14.3	1,027	12.5	2,827
Prince Edward Island	157	100	107	96	134	92	13.1	553	2.2	1,356
Nova Scotia	803	744	766	632	724	670	3.8	3,602	2.7	8,524
New Brunswick	1,352	1,119	1,108	957	1,077	1,032	4.9	5,414	2.7	12,864
Quebec	11,851	11,413	12,040	10,116	11,015	10,515	5.4	55,557	-1.3	128,514
Ontario	26,972	26,334	27,814	23,306	25,661	25,075	1.7	126,777	-1.7	289,216
Manitoba	1,091	1,014	1,106	928	985	975	7.2	5,056	1.3	11,413
Saskatchewan	838	795	904	715	708	688	17.0	3,919	3.7	7,913
Alberta	4,370	4,163	4,454	3,767	3,844	3,623	8.0	20,489	5.0	45,838
British Columbia	3,694	3,482	3,598	3,060	3,164	3,124	9.4	16,627	-3.3	37,223
311 Food manufacturing										
Newfoundland and Labrador	112	52	55	51	104	47	10.6	323	-9.3	1,056
Prince Edward Island	98	66	69	61	87	57	10.1	356	-1.0	902
Nova Scotia	162	162	163	147	159	148	1.2	778	-0.7	1,999
New Brunswick	217	124	135	115	183	111	15.5	714	0.6	2,035
Quebec	1,467	1,315	1,346	1,234	1,323	1,203	9.1	6,569	5.2	15,170
Ontario	2,265	2,168	2,188	2,003	2,154	2,090	5.6	10,622	1.9	25,005
Manitoba	233	222	232	201	204	200	11.9	1,104	1.0	2,457
Saskatchewan	172	185	205	163	168	173	10.6	884	4.0	1,947
Alberta	802	755	793	685	685	704	8.5	3,739	-3.5	7,976
British Columbia	434	386	403	353	432	400	0.2	1,926	3.5	4,890
312 Beverage and tobacco product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	320	280	314	251	358	300	-2.4	1,420	9.4	3,965
Ontario	527	450	445	347	465	431	2.8	2,089	0.6	5,316
Saskatchewan	3	3	3	2	3	3	11.2	13	-48.8	33
British Columbia	102	97	92	73	102	91	4.2	428	0.4	1,091
313 Textile mills										
Quebec	175	163	169	150	188	184	-9.6	805	-13.6	2,046
Ontario	89	88	97	86	91	90	0.4	444	-10.0	1,028
314 Textile product mills										
Quebec	69	71	70	65	79	78	-10.7	340	-11.0	912
Ontario	91	91	87	77	107	92	-8.0	425	-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	318	348	371	338	330	379	-6.8	1,688	-7.0	4,247
Ontario	138	146	153	142	164	156	-9.3	714	-6.1	1,923
Manitoba	19	19	22	22	20	17	7.7	103	-5.0	264
Saskatchewan	2	2	2	2	2	2	-3.5	11	7.6	28
Alberta	9	12	11	11	12	11	-1.3	53	-1.2	139
British Columbia	x	x	x	x	x	x	x	x	0.0	x
316 Leather and allied product manufacturing										
Quebec	22	22	23	24	26	23	-7.7	114	-9.4	390
Ontario	15	16	20	17	17	16	-6.0	81	-15.5	239
321 Wood product manufacturing										
Nova Scotia	59	46	51	35	52	44	9.1	232	-1.8	544
Quebec	956	912	859	701	790	778	10.3	4,049	-0.9	8,848
Ontario	627	580	552	441	544	506	7.0	2,589	-2.0	6,058
Manitoba	73	73	74	61	56	54	32.4	333	4.5	697
Saskatchewan	68	59	56	47	34	31	71.0	266	14.6	468
Alberta	338	332	318	272	217	212	44.4	1,496	11.3	2,932
British Columbia	1,143	1,084	1,099	911	821	827	21.7	5,018	-12.0	9,913
322 Paper manufacturing										
Nova Scotia	85	77	74	72	77	79	4.9	383	1.3	875
Quebec	880	853	907	800	921	916	-7.2	4,247	-8.4	10,620
Ontario	865	861	933	814	928	935	-8.5	4,287	-1.9	10,825
Alberta	152	147	161	137	145	173	-5.8	727	1.4	1,788
British Columbia	550	471	526	465	486	494	2.2	2,448	2.8	5,652

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	2004	% Change from 2002	2003
323 Printing and related support activities										
Quebec	247	237	248	223	238	247	0.7	1,168	-3.7	2,758
Ontario	544	551	612	499	534	551	-0.3	2,676	0.4	6,423
Manitoba	45	41	47	38	48	43	1.1	206	-1.2	510
Saskatchewan	12	10	14	10	11	11	-0.8	57	5.4	147
Alberta	56	59	59	49	58	56	-3.1	271	-5.6	662
British Columbia	59	63	67	54	58	59	-0.6	297	-8.5	758
324 Petroleum and coal products manufacturing										
Quebec	751	686	741	728	571	602	4.4	3,621	12.2	8,007
Ontario	1,244	1,078	1,096	1,041	915	914	9.5	5,511	6.8	11,670
Alberta	743	692	777	671	675	591	1.4	3,575	10.2	8,200
British Columbia	x	x	x	x	x	x	x	x	0.0	x
325 Chemical manufacturing										
Quebec	913	789	771	654	867	743	3.3	3,754	0.0	8,556
Ontario	1,974	1,972	2,106	1,749	1,851	1,856	4.0	9,538	3.1	21,357
Manitoba	82	63	81	58	84	75	0.8	354	28.2	814
Saskatchewan	159	129	108	84	142	96	22.5	556	16.5	799
Alberta	898	778	790	682	800	663	3.8	3,846	5.5	8,285
British Columbia	110	100	94	82	104	99	1.2	462	6.6	1,084
326 Plastics and rubber products manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	577	552	585	466	539	538	4.6	2,619	5.8	6,038
Ontario	1,338	1,330	1,370	1,173	1,326	1,319	-0.4	6,313	-0.9	14,790
Manitoba	53	52	50	42	54	49	1.0	237	5.7	568
Saskatchewan	11	12	11	8	10	11	4.2	49	3.5	107
Alberta	75	72	77	63	72	65	7.0	341	0.9	836
British Columbia	97	99	98	85	107	101	-1.7	454	9.6	1,156
327 Non-metallic mineral product manufacturing										
Nova Scotia	x	x	x	x	x	x	x	x	0.0	x
Quebec	293	233	206	150	281	208	9.3	1,016	4.3	2,679
Ontario	523	475	427	346	499	449	4.7	2,076	5.6	5,560
Saskatchewan	7	5	4	2	9	4	-1.4	19	-7.7	71
Alberta	132	120	108	92	125	112	-1.1	541	-0.7	1,556
British Columbia	132	133	131	111	124	120	9.6	600	11.6	1,416
331 Primary metal manufacturing										
Quebec	1,539	1,532	1,638	1,341	1,152	1,197	22.4	7,366	3.1	14,769
Ontario	1,666	1,679	1,782	1,426	1,490	1,509	5.0	7,976	-2.9	16,907
Alberta	147	138	193	157	160	134	2.3	798	41.3	1,812
332 Fabricated metal product manufacturing										
Newfoundland and Labrador	17	20	14	13	14	11	57.5	79	49.4	153
Prince Edward Island	2	2	3	1	1	2	-2.9	10	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	598	572	594	495	560	519	5.5	2,708	0.5	6,597
Ontario	1,621	1,582	1,661	1,383	1,526	1,505	3.3	7,529	-3.9	17,460
Manitoba	61	60	60	49	50	51	13.2	276	6.0	620
Saskatchewan	40	35	36	28	34	34	7.6	167	4.9	389
Alberta	313	285	334	278	254	255	14.1	1,465	22.7	3,410
British Columbia	180	167	167	135	145	140	12.0	772	0.4	1,721
333 Machinery manufacturing										
Quebec	429	381	433	369	389	381	-0.5	1,971	-3.7	4,920
Ontario	1,202	1,193	1,219	1,037	1,242	1,151	-2.0	5,686	-6.8	13,688
Manitoba	82	76	84	65	68	68	9.8	379	-9.0	802
Saskatchewan	50	70	71	59	50	68	3.1	295	-10.7	611
Alberta	293	347	355	277	254	254	21.7	1,577	13.0	3,308
British Columbia	168	154	184	155	154	146	7.6	802	9.1	1,837
334 Computer and electronic product manufacturing										
Quebec	491	426	672	470	452	405	7.3	2,487	-17.3	5,856
Ontario	888	777	1,048	786	765	708	11.5	4,228	-7.6	9,773
Saskatchewan	x	x	x	x	x	x	x	x	0.0	x
Alberta	107	128	175	137	86	103	12.1	631	-31.8	1,520
British Columbia	97	98	108	96	86	90	19.8	481	-10.0	1,101

Table 10 – continued

Shipments by major group and province - Unadjusted

Province	Current year				Previous year		Year to date		Annual	
	May 2004	Apr. 2004	Mar. 2004	Feb. 2004	May 2003	Apr. 2003	% Change from 2003	2004	% Change from 2002	2003
335 Electrical equipment, appliance and component manufacturing										
Quebec	316	306	321	262	283	264	6.8	1,464	-1.3	3,405
Ontario	473	481	537	463	472	458	3.6	2,368	-7.9	5,458
Manitoba	11	12	14	13	14	15	-14.8	61	-22.0	166
Saskatchewan	15	13	15	12	12	12	17.5	65	-31.9	145
Alberta	28	37	39	33	26	27	30.1	167	9.7	356
British Columbia	x	x	x	x	x	x	x	x	0.0	x
336 Transportation equipment manufacturing										
Nova Scotia	73	70	65	57	63	61	7.6	320	-10.6	707
Quebec	948	1,224	1,199	907	1,150	1,065	3.4	5,578	-7.1	12,570
Ontario	9,881	9,860	10,439	8,604	9,631	9,380	-0.2	46,863	-3.3	103,510
Manitoba	176	151	168	134	155	172	-3.6	749	3.6	1,697
Saskatchewan	23	22	23	20	25	23	-2.6	108	-11.5	240
Alberta	61	64	67	61	64	74	-3.6	324	9.0	780
British Columbia	101	94	100	85	90	95	6.2	463	-36.7	991
337 Furniture and related product manufacturing										
Quebec	335	332	353	309	353	340	-1.8	1,633	-5.6	3,940
Ontario	645	630	689	596	631	622	2.8	3,219	6.2	7,627
Manitoba	46	45	47	44	45	45	-1.4	220	-1.0	544
Saskatchewan	6	6	6	5	6	6	-1.5	27	8.7	68
Alberta	70	73	76	63	74	73	-3.7	346	-10.5	851
British Columbia	70	74	73	62	66	68	2.1	336	5.6	799
339 Miscellaneous manufacturing										
Newfoundland and Labrador	x	x	x	x	x	x	x	x	0.0	x
Quebec	207	177	218	179	165	143	19.4	941	-1.1	2,221
Ontario	357	326	354	273	310	334	-1.3	1,541	2.6	3,560
Manitoba	17	16	22	14	14	12	20.9	81	-2.1	175
Saskatchewan	5	5	5	4	5	5	4.5	22	13.6	55
Alberta	57	46	41	32	52	42	15.0	221	44.3	534
British Columbia	54	74	63	51	48	46	23.1	289	1.7	651

About the Monthly Survey of Manufacturing

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

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

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

Concepts and definitions

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

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

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

1. Shipments

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

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

2. Inventories

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

3. Orders

a) Unfilled orders

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

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

b) New orders

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

4. Non-durable / durable goods

a) Non-durable goods industries

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

b) Durable goods industries

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

Survey design and methodology

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

Concept review

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

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

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

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

Methodology

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

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

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

Components of the redesigned survey

Target population and sampling frame

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

The sample

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

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

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

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

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

Data collection

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

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

Data quality

Statistical edit and imputation

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

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

Revisions

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

Estimation

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

Benchmarking

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

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

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

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

Sampling and non-sampling errors

The statistics in this publication are estimates derived from a sample survey and, as such, can be subject to errors. The following material is provided to assist the reader in the interpretation of the estimates published.

Estimates derived from a sample survey are subject to a number of different kinds of errors. These errors can be broken down into two major types: sampling and non-sampling.

1. Sampling errors

Sampling errors are an inherent risk of sample surveys. They result from the difference between the value of a variable if it is randomly sampled and its value if a census is taken (or the average of all possible random values). These errors are present because observations are made only on a sample and not on the entire population.

The sampling error depends on factors such as the size of the sample, variability in the population, sampling design and method of estimation. For example, for a given sample size, the sampling error will depend on the stratification procedure employed, allocation of the sample, choice of the sampling units and method of selection. (Further, even for the same sampling design, we can make different calculations to arrive at the most efficient estimation procedure.) The most important feature of probability sampling is that the sampling error can be measured from the sample itself.

2. Non-sampling Errors

Non-sampling errors result from a systematic flaw in the structure of the data-collection procedure or design of any or all variables examined. They create a difference between the value of a variable obtained by sampling or census methods and the variable's true value. These errors are present whether a sample or a complete census of the population is taken. Non-sampling errors can be attributed to one or more of the following sources:

a) Coverage error: This error can result from incomplete listing and inadequate coverage of the population of interest.

b) Data response error: This error may be due to questionnaire design, the characteristics of a question, inability or unwillingness of the respondent to provide correct information, misinterpretation of the questions or definitional problems.

c) Non-response error: Some respondents may refuse to answer questions, some may be unable to respond, and others may be too late in responding. Data for the non-responding units can be imputed using the data from responding units or some earlier data on the non-responding units if available.

The extent of error due to imputation is usually unknown and is very much dependent on any characteristic differences between the respondent group and the non-respondent group in the survey. This error generally decreases with increases in the response rate and attempts are therefore made to obtain as high a response rate as possible.

d) Processing error: These errors may occur at various stages of processing such as coding, data entry, verification, editing, weighting, and tabulation, etc. Non-sampling errors are difficult to measure. More important, non-sampling errors require control at the level at which their presence does not impair the use and interpretation of the results.

Measures have been undertaken to minimize the nonsampling errors. For example, units have been defined in a most precise manner and the most up-to-date listings have been used. Questionnaires have been carefully designed to minimize different interpretations. As well, detailed acceptance testing has been carried out for the different stages of editing and processing and every possible effort has been made to reduce the non-response rate as well as the response burden.

Measures of Sampling and Non-sampling Errors

1. Sampling Error Measures

The sample used in this survey is one of a large number of all possible samples of the same size that could have been selected using the same sample design under the same general conditions. If it was possible that each one of these samples could be surveyed under essentially the same conditions, with an estimate calculated from each sample, it would be expected that the sample estimates would differ from each other.

The average estimate derived from all these possible sample estimates is termed the expected value. The expected value can also be expressed as the value that would be obtained if a census enumeration were taken under identical conditions of collection and processing. An estimate calculated from a sample survey is said to be precise if it is near the expected value.

Sample estimates may differ from this expected value of the estimates. However, since the estimate is based on a probability sample, the variability of the sample estimate with respect to its expected value can be measured. The variance of an estimate is a measure of the precision of the sample estimate and is defined as the average, over all possible samples, of the squared difference of the estimate from its expected value.

The standard error is a measure of precision in absolute terms. The coefficient of variation, defined as the standard error divided by the sample estimate, is a measure of precision in relative terms. For comparison purposes, one may more readily compare the sampling error of one estimate to the sampling error of another estimate by using the coefficient of variation.

In this publication, the coefficient of variation is used to measure the sampling error of the estimates. However, since the coefficient of variation published for this survey is calculated from the responses of individual units, it also measures some non-sampling error.

The formula used to calculate the published coefficients of variation (CV) in Table 1 is:

$$CV(X) = \frac{S(X)}{X}$$

where X denotes the estimate and S(X) denotes the standard error of X.

In this publication, the coefficient of variation is expressed as a percentage.

Confidence intervals can be constructed around the estimate using the estimate and the coefficient of variation. Thus, for our sample, it is possible to state with a given level of confidence that the expected value will fall within the confidence interval constructed around the estimate. For example, if an estimate of $12,000,000 has a coefficient of variation of 10%, the standard error will be $1,200,000 or the estimate multiplied by the coefficient of variation. It can then be stated with 68% confidence that the expected value will fall within the interval whose length equals the standard deviation about the estimate, i.e., between $10,800,000 and $13,200,000. Alternatively, it can be stated with 95% confidence that the expected value will fall within the interval whose length equals two standard deviations about the estimate, i.e., between $9,600,000 and $14,400,000.

The text table 1 contains the national level CVs, expressed as a percentage, for all manufacturing for the MSM characteristics. For CVs at other aggregate levels, contact the Marketing and Dissemination Section at (613) 951-9497, toll free: 1-866-873-8789 or by e-mail at *manufact@statcan.ca*.

Text Table 1

National Level CVs by Characteristic

Month	Shipments	Raw material Inventories	Goods in process Inventories	Finished products Inventories	Unfilled orders
			%		
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	0.55	1.10	1.00	1.37	1.91
March 2004	0.59	1.10	0.98	1.37	2.13
April 2004	0.60	1.15	0.97	1.31	2.28
May 2004	0.60	1.13	0.93	1.28	2.33

2. Non-sampling Error Measures

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

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

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

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

Text Table 2

Average national weighted rates by characteristic

Characteristic	Response	Imputation	Editing
	%		
Shipments	90.97	6.21	2.82
Raw materials	79.52	16.79	3.69
Goods in process	63.50	10.17	26.33
Finished products	79.56	13.38	7.06
Unfilled orders	78.52	7.45	14.03

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.