



Monthly Survey of Manufacturing

March 2003



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Monthly Survey of Manufacturing Section

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- . not available for any reference period.
- .. not available for a specific reference period.
- ... not applicable.
- x suppressed to meet the confidentiality requirements of the Statistics Act.

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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 refer to the "Survey Documentation" section at the end of this publication or consult Statistics Canada's Website at www.statcan.ca/english/sdds/2101.htm .

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 OT6 (613) 951-8200.

Acknowledgement

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Highlights

A boost in motor vehicle manufacturing, coupled with a price-driven rise in shipments of petroleum and coal products, contributed to a 1.4% increase in manufacturing shipments in March. Shipments rose to \$44.7 billion, the highest level since November 2000.

Despite global uncertainty in the wake of the war in Iraq and the tenuous state of the US economy, the Canadian manufacturing sector held its own in recent months. Manufacturers posted a 2.2% increase in shipments in the first quarter, more than enough to compensate for the 0.9% decline in the fourth quarter of 2002. Since the sharp downturn in manufacturing activity during 2001, Canadian manufacturers have reported higher shipments in four of the last five quarters.

The majority of manufacturing industries increase in March

Of the 21 manufacturing industries, representing 65% of total shipments, 13 reported increases in March. The non-durable and durable goods sectors were both up. Soaring petroleum shipments contributed to a 1.6% rise among non-durable goods manufacturers, the fourth increase in a row. Motor vehicle manufacturing boosted shipments of durable goods by 1.2% to \$25.1 billion.

Ontario and Alberta lead all provinces

Ontario led the seven provinces and all territories that reported higher shipments in March. Manufacturers of motor vehicles and petroleum and coal products contributed to a \$559 million increase (+2.4%) in shipments. Ontario, Canada's key manufacturing province, reported shipments of \$23.9 billion in March.

Alberta's manufacturers posted a \$115.7 million (+3.0%) increase in shipments. Machinery and fabricated metal products industries contributed to the fifth consecutive monthly gain in shipments for the province. New Brunswick rounded out the top three provinces. Shipments were up \$94.5 million (+8.5%) to \$1.2 billion in March.

Manufacturers apprehensive about the second quarter

Despite the strength of the Canadian manufacturing sector in the first quarter, there are some underlying concerns. Record high petroleum and coal product prices, which contributed to the advance in manufacturing shipments during the first quarter, have since fallen significantly. As well, fluctuations in the motor vehicle industry have been a key influence. Waning consumer demand for motor vehicles in the United States and Canada and rising retail inventories have contributed to the recent volatility of the sector.

Shipments by province and territory

	February 2003	March 2003	February to March 2003
Seasonally adjusted			
	\$ millions		% change
Newfoundland and Labrador	173	177	2.4
Prince Edward Island	107	111	4.0
Nova Scotia	770	785	1.9
New Brunswick	1,107	1,201	8.5
Quebec	10,383	10,219	-1.6
Ontario	23,295	23,854	2.4
Manitoba	998	977	-2.1
Saskatchewan	604	613	1.6
Alberta	3,821	3,937	3.0
British Columbia	2,826	2,814	-0.4
Yukon, Northwest Territories and Nunavut	5	6	21.1

Excluding the motor vehicle and parts industries and the petroleum and coal products industry, shipments increased a more modest 0.3% in March.

Global uncertainty and the recent surge in the value of the Canadian dollar have contributed to additional unease among manufacturers. According to April's quarterly Business Conditions Survey, manufacturers were concerned with lower levels of orders and future production. In April, 31% of manufacturers stated that they anticipated decreasing production during the second quarter, and 26% said their levels of unfilled orders were lower than normal.

In March, unfilled orders fell 0.4% to \$42.9 billion. This was the seventh consecutive decline and the longest series of monthly decreases of unfilled orders since 1990-1991.

Factory jobs lost

Employment in manufacturing continued to weaken in April, down 0.3%. This followed a sharp decline in March (-1.6%). According to the latest release of the Labour Force Survey, manufacturers have cut 38,000 (-1.6%) jobs since the start of the year. The largest declines in the first four months of 2003 were in computer and electronic products. On the positive side, offsetting employment gains were reported in motor vehicle and parts manufacturing from January to April.

Automakers boost manufacturing in March

The motor vehicle industry, subject to considerable variation in recent months, reported a 6.2% jump in shipments in March. Shipments rose to \$5.7 billion, the highest level since the summer of 2002. This is a reversal of February's drop (-2.5%), and was preceded by soaring shipments in January (+15.9%). Some manufacturers noted that they had increased production levels in order to build up stock of new models.

The trend for shipments of motor vehicles returned to the positive side in March for the first time since July 2002.

Prior to the first quarter of 2003, there had been a general deceleration in motor vehicle manufacturing during the later half of 2002. Higher retail inventories and heightened uncertainty regarding the sustainability of demand in 2003 contributed to the sharp slowdown in manufacturing of motor vehicles in the fourth quarter of 2002. According to the latest release of new motor vehicle sales for March, sales declined 4.4% following large monthly fluctuations in February (+14.0%) and January (-14.6%).

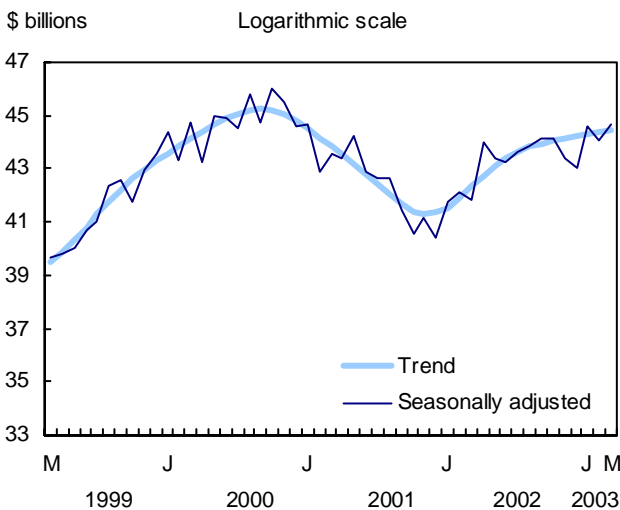
Petroleum and coal product manufacturers post record high shipments

Rising prices continued to push petroleum and coal product shipments to record levels. Shipments jumped 5.5% to \$3.6 billion in March and are now up more than 25% since November.

Petroleum prices increased 1.8% in March, and have soared 20% during the first three months of 2003. The start of the war in Iraq coupled with a colder-than-normal winter in North America, contributed to international concerns for adequate supplies of petroleum products.

The paper and machinery industries also contributed to higher shipments in March. Paper shipments rose 3.0% to \$2.8 billion. Manufacturers of machinery posted a 2.5% rise in shipments to \$2.0 billion, the highest level since October. Decreases in shipments of wood products (-4.2%) and primary metals (-2.0%) partly offset some of the increase in total shipments in March.

Manufacturers regain lost ground in March



Manufacturers' inventories continue to accumulate

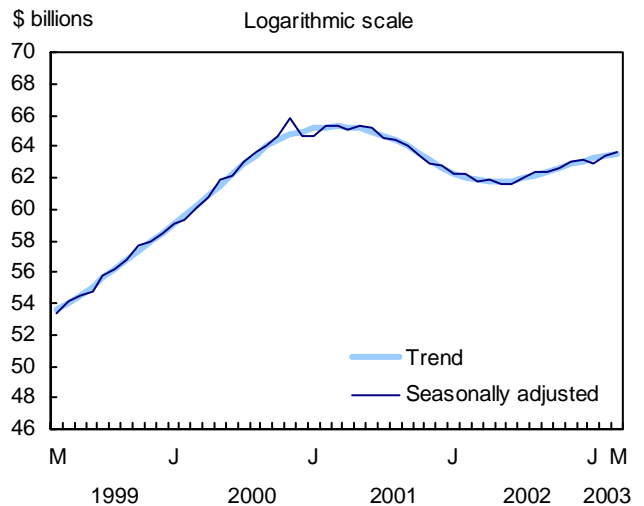
Following a 0.8% gain in February, manufacturers' inventories increased an additional 0.4% in March. Inventories stood at \$63.7 billion, the highest level in 18 months. The trend for inventories has been positive for ten consecutive months.

Finished-product inventories highest since June 2001

Finished-product inventories increased 1.0% to \$20.0 billion in March, just short of June 2001's peak of \$20.2 billion. The accumulation of finished-product inventories in recent months may be a sign of weakening demand, partly the result of ongoing economic uncertainty of Canada's largest trading partner, the United States.

Raw material inventories also increased in March, up 0.5% to \$27.8 billion. Manufacturers reduced goods-in-process inventories by 0.4% to \$15.9 billion, the third decrease in four months.

Inventories hit 18-month high



The main contributors to March's increase in inventories were the chemical products and wood products industries. Inventories of chemical products climbed 2.1% to \$5.9 billion. In recent months, pharmaceutical and chemical fertilizer manufacturers have been increasing stock to meet product demand. Higher industrial prices for chemical and petroleum products also boosted the value of chemical inventories.

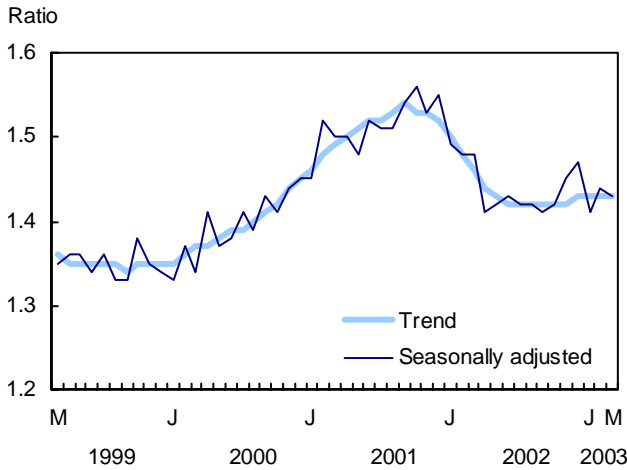
A gradual slowdown in construction of new housing, coupled with falling industrial prices, contributed to a build-up of wood product inventories in 2003. Inventories increased 2.1% to \$4.6 billion, the highest level since October 2001.

Higher shipments contribute to a lower inventory-to-shipment ratio

The inventory-to-shipment ratio settled back to 1.43 in March from 1.44 in February. March's increase in shipments outpaced the 0.4% rise in inventories, contributing to the lower ratio.

The finished-product inventory-to-shipment ratio remained stable at 0.45 in March, the result of comparable increases in both shipments and finished-product inventories. The ratio is a measure of the time that would be required in order to exhaust finished-product inventories if shipments were to remain at their current level.

The inventory-to-shipment ratio edges back in March



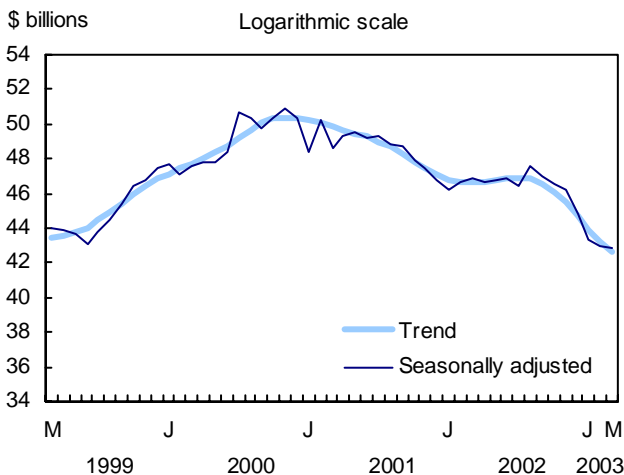
Fewer unfilled orders for aerospace products pull down total manufacturing

In March, Canadian manufacturers reported the seventh consecutive decline in unfilled orders. Orders decreased 0.4% to \$42.9 billion, the lowest level since January 1999. Ongoing weakness in the global aviation sector was partly responsible for the decline. Excluding the aerospace products and parts industry, unfilled orders improved by 0.7% in March.

Manufacturers of aerospace products and parts reported a 2.5% drop in orders to \$13.8 billion, the lowest level in more than four years. The threat of terrorism, the war in Iraq and a significant downturn in business travel have all contributed to the persistent slump in the aerospace products and parts industry.

Unfilled orders increased in the machinery (+6.5%) and the plastics and rubber products industries (+10.0), partly offsetting the overall decrease in March.

Unfilled orders decrease for the seventh consecutive month



New orders rise for the third month in a row

In March, new orders rose to their highest level since August 2002. Manufacturers reported \$44.5 billion worth of new orders on their books in March, up 1.6% from February. Motor vehicles, computers and plastic and rubber products industries were the top contributors.

Note to readers

In addition to current-month estimates, data for the previous three months are regularly revised. Factors influencing revisions include late receipt of company data, incorrect information reported earlier, replacement of estimates with actual figures (once available), and seasonal adjustments. Consult the appropriate CANSIM tables for revised data.

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

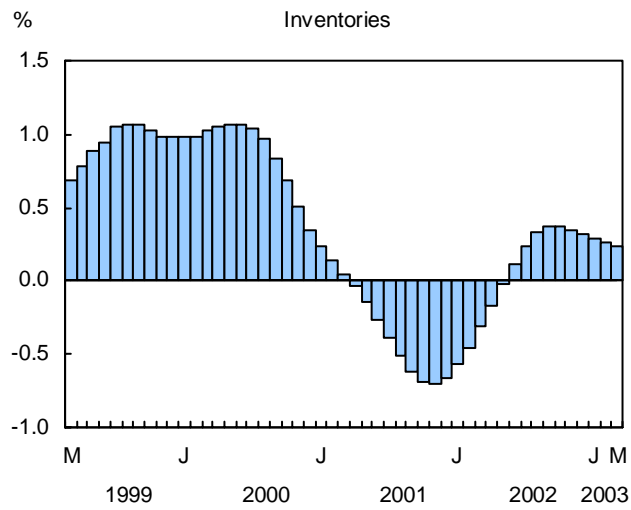
Durable goods industries include clothing, wood products, non-metallic mineral products, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment, appliance and components, transportation equipment, furniture and related products, and miscellaneous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

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

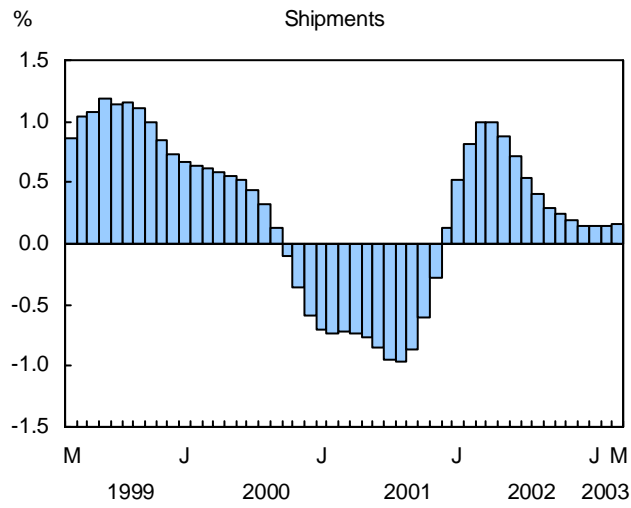
New orders are those received whether shipped in the current month or not. They are measured as the sum of shipments for the current month plus the change in unfilled orders. Some people interpret new orders as orders that will lead to future demand. This is inappropriate since the "new orders" variable 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.

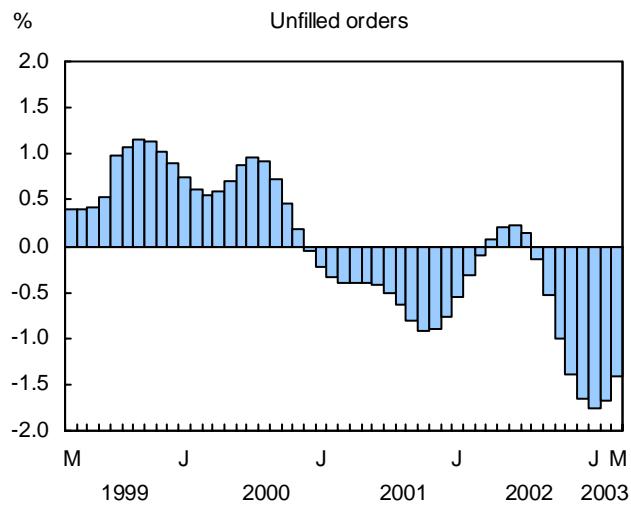
Monthly change in trend



Monthly change in trend



Monthly change in trend



Products and Services

Related Products and Data Sources

- Manufacturing Industries of Canada, 31-203-XPB
- Business Condition Survey, CANSIM (\$) tables 302-0007 and 302-0008
- Perspectives on Labour and Income, 75-001-XIE or 75-001-XPE

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Reference period
November 2002
December 2002
January 2003
February 2003
March 2003
April 2003
May 2003
June 2003
July 2003
August 2003
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October 2003
November 2003
December 2003

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December 16, 2003
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February 13, 2004

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Table 1
All manufacturing industries

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
March 2002	43,111	62,802	46,430	43,060	41,803	61,724	46,931	42,137		
April 2002	44,708	62,485	46,864	45,142	43,982	61,861	46,641	43,693		
May 2002	46,742	61,933	47,099	46,978	43,380	61,657	46,761	43,500		
June 2002	44,509	61,190	46,755	44,165	43,228	61,612	46,933	43,400		
July 2002	39,887	61,205	46,885	40,016	43,649	61,958	46,440	43,156		
August 2002	45,110	62,231	48,159	46,122	43,851	62,407	47,556	44,968		
September 2002	45,149	62,193	47,324	44,308	44,134	62,320	46,963	43,541		
October 2002	47,191	62,295	46,773	46,640	44,132	62,580	46,491	43,660		
November 2002	44,305	63,129	46,202	43,734	43,385	62,989	46,127	43,021		
December 2002	39,721	62,389	44,536	38,054	42,998	63,161	44,820	41,690		
January 2003	41,875	62,582	42,745	40,085	44,586	62,914	43,266	43,032		
February 2003	40,828	64,131	42,733	40,816	44,088	63,436	43,017	43,839		
March 2003	45,639	64,822	42,511	45,417	44,694	63,695	42,856	44,533		
Month to month % change										
Shipments		Inventories		Inventory to shipments ratio		Unfilled orders		New orders		
Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	
March 2002	-0.9	1.0	-0.8	-0.3	1.48	1.46	0.7	-0.1	-1.1	1.2
April 2002	5.2	1.0	0.2	-0.2	1.41	1.44	-0.6	0.1	3.7	1.2
May 2002	-1.4	0.9	-0.3	0.0	1.42	1.43	0.3	0.2	-0.4	1.0
June 2002	-0.3	0.7	-0.1	0.1	1.43	1.42	0.4	0.2	-0.2	0.7
July 2002	1.0	0.5	0.6	0.2	1.42	1.42	-1.1	0.1	-0.6	0.4
August 2002	0.5	0.4	0.7	0.3	1.42	1.42	2.4	-0.1	4.2	0.1
September 2002	0.6	0.3	-0.1	0.4	1.41	1.42	-1.2	-0.5	-3.2	-0.1
October 2002	0.0	0.2	0.4	0.4	1.42	1.42	-1.0	-1.0	0.3	-0.2
November 2002	-1.7	0.2	0.7	0.3	1.45	1.42	-0.8	-1.4	-1.5	-0.2
December 2002	-0.9	0.2	0.3	0.3	1.47	1.43	-2.8	-1.7	-3.1	-0.1
January 2003	3.7	0.1	-0.4	0.3	1.41	1.43	-3.5	-1.8	3.2	0.1
February 2003	-1.1	0.2	0.8	0.3	1.44	1.43	-0.6	-1.7	1.9	0.3
March 2003	1.4	0.2	0.4	0.2	1.43	1.43	-0.4	-1.4	1.6	0.4

Table 2
Motor vehicle, and parts and accessories industries

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
March 2002	8,573	3,339	1,628	8,612	7,847	3,362	1,632	7,891		
April 2002	9,372	3,454	1,633	9,376	8,879	3,430	1,672	8,919		
May 2002	9,399	3,511	1,702	9,468	8,322	3,478	1,715	8,365		
June 2002	8,707	3,356	1,697	8,702	8,363	3,439	1,699	8,348		
July 2002	5,546	3,527	1,776	5,625	8,803	3,576	1,733	8,837		
August 2002	8,832	3,490	1,939	8,995	8,590	3,493	1,894	8,750		
September 2002	8,417	3,525	2,060	8,537	8,347	3,512	2,031	8,485		
October 2002	9,054	3,445	1,968	8,962	8,298	3,450	1,959	8,226		
November 2002	8,695	3,660	1,933	8,660	8,124	3,586	1,932	8,097		
December 2002	6,157	3,689	1,855	6,079	7,258	3,751	1,853	7,179		
January 2003	8,163	3,585	1,834	8,142	8,267	3,550	1,818	8,232		
February 2003	8,217	3,631	1,787	8,170	8,118	3,581	1,784	8,083		
March 2003	8,913	3,521	1,715	8,841	8,433	3,486	1,730	8,380		
Month to month % change										
Shipments		Inventories		Inventory to shipments ratio		Unfilled orders		New orders		
Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	
March 2002	-4.3	2.0	-1.5	0.6	0.43	0.42	2.7	2.3	-3.6	2.0
April 2002	13.1	1.7	2.0	0.6	0.39	0.41	2.4	2.6	13.0	1.8
May 2002	-6.3	1.2	1.4	0.6	0.42	0.41	2.6	2.8	-6.2	1.3
June 2002	0.5	0.7	-1.1	0.6	0.41	0.41	-0.9	3.1	-0.2	0.7
July 2002	5.3	0.1	4.0	0.6	0.41	0.41	2.0	3.1	5.9	0.2
August 2002	-2.4	-0.2	-2.3	0.5	0.41	0.41	9.2	2.7	-1.0	-0.3
September 2002	-2.8	-0.4	0.6	0.4	0.42	0.42	7.3	1.9	-3.0	-0.6
October 2002	-0.6	-0.5	-1.8	0.4	0.42	0.42	-3.5	0.7	-3.1	-0.8
November 2002	-2.1	-0.5	3.9	0.3	0.44	0.43	-1.4	-0.5	-1.6	-0.8
December 2002	-10.7	-0.5	4.6	0.2	0.52	0.43	-4.1	-1.5	-11.3	-0.7
January 2003	13.9	-0.4	-5.4	0.1	0.43	0.43	-1.9	-2.1	14.7	-0.5
February 2003	-1.8	-0.1	0.9	0.1	0.44	0.43	-1.9	-2.2	-1.8	-0.2
March 2003	3.9	0.1	-2.7	0.1	0.41	0.43	-3.0	-2.1	3.7	0.1

Table 3

All manufacturing industries except motor vehicle, parts and accessories industries

Period	Unadjusted				Seasonally adjusted					
	Shipments	Inventories	Unfilled orders	New orders	Shipments	Inventories	Unfilled orders	New orders		
\$ millions										
March 2002	34,538	59,463	44,801	34,449	33,955	58,362	45,299	34,247		
April 2002	35,336	59,031	45,231	35,766	35,103	58,431	44,970	34,774		
May 2002	37,343	58,421	45,397	37,511	35,058	58,179	45,046	35,135		
June 2002	35,801	57,834	45,058	35,462	34,865	58,174	45,234	35,052		
July 2002	34,340	57,678	45,109	34,391	34,846	58,383	44,707	34,319		
August 2002	36,279	58,740	46,220	37,127	35,261	58,914	45,663	36,218		
September 2002	36,732	58,668	45,264	35,771	35,787	58,808	44,932	35,056		
October 2002	38,137	58,850	44,804	37,678	35,834	59,130	44,532	35,434		
November 2002	35,610	59,468	44,269	35,075	35,260	59,403	44,195	34,923		
December 2002	33,564	58,700	42,681	31,975	35,740	59,410	42,967	34,511		
January 2003	33,712	58,997	40,911	31,943	36,319	59,364	41,448	34,800		
February 2003	32,611	60,500	40,946	32,646	35,971	59,856	41,233	35,756		
March 2003	36,726	61,302	40,796	36,576	36,260	60,209	41,125	36,153		
Month to month % change										
Shipments		Inventories		Inventory to shipments ratio		Unfilled orders		New orders		
Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	Seasonally adjusted	Trend	
March 2002	0.0	0.7	-0.7	-0.4	1.72	1.71	0.6	-0.2	-0.4	1.0
April 2002	3.4	0.8	0.1	-0.2	1.66	1.69	-0.7	0.0	1.5	1.0
May 2002	-0.1	0.8	-0.4	-0.1	1.66	1.68	0.2	0.1	1.0	0.9
June 2002	-0.6	0.7	0.0	0.1	1.67	1.67	0.4	0.1	-0.2	0.8
July 2002	-0.1	0.6	0.4	0.2	1.68	1.66	-1.2	0.0	-2.1	0.5
August 2002	1.2	0.5	0.9	0.3	1.67	1.66	2.1	-0.3	5.5	0.2
September 2002	1.5	0.5	-0.2	0.4	1.64	1.66	-1.6	-0.6	-3.2	0.0
October 2002	0.1	0.4	0.5	0.4	1.65	1.65	-0.9	-1.1	1.1	-0.1
November 2002	-1.6	0.4	0.5	0.3	1.68	1.65	-0.8	-1.4	-1.4	-0.1
December 2002	1.4	0.3	0.0	0.3	1.66	1.65	-2.8	-1.7	-1.2	0.0
January 2003	1.6	0.3	-0.1	0.3	1.63	1.66	-3.5	-1.7	0.8	0.2
February 2003	-1.0	0.2	0.8	0.3	1.66	1.66	-0.5	-1.7	2.7	0.4
March 2003	0.8	0.2	0.6	0.3	1.66	1.66	-0.3	-1.4	1.1	0.5

Table 4
Shipments by major group and selected industries

	NAICS Code	Unadjusted					
		Current periods					
		March 2003	February 2003	January 2003	December 2002		
		\$ millions					
Food manufacturing	311	5,203	4,745	4,840	5,357		
Beverage and tobacco product manufacturing	312	1,085	907	846	1,206		
Textile mills	313	266	233	235	223		
Textile product mills	314	194	183	177	177		
Clothing manufacturing	315	557	534	482	445		
Leather and allied product manufacturing	316	49	45	46	54		
Wood product manufacturing	321	2,321	2,172	2,169	2,050		
Paper manufacturing	322	2,787	2,518	2,681	2,633		
Printing and related support activities	323	906	773	792	815		
Petroleum and coal products manufacturing	324	3,574	3,214	3,175	3,070		
Chemical manufacturing	325	3,535	3,116	3,305	3,129		
Plastics and rubber products manufacturing	326	1,967	1,783	1,861	1,588		
Non-metallic mineral product manufacturing	327	832	697	711	748		
Primary metal manufacturing	331	2,930	2,729	2,951	2,549		
Fabricated metal product manufacturing	332	2,340	2,108	2,140	1,914		
Machinery manufacturing	333	2,148	1,822	1,814	1,931		
Computer and electronic product manufacturing	334	1,766	1,391	1,395	1,820		
Electrical equipment, appliance and component manufacturing	335	801	697	730	692		
Transportation equipment manufacturing	336	10,853	9,767	10,129	7,963		
Motor vehicle manufacturing	3361	6,050	5,513	5,411	4,043		
Motor vehicle body and trailer manufacturing	3362	259	202	224	205		
Motor vehicle parts manufacturing	3363	2,862	2,704	2,752	2,114		
Aerospace product and parts manufacturing	3364	1,094	930	1,128	1,121		
Railroad rolling stock manufacturing	3365	292	217	303	225		
Ship and boat building	3366	102	75	79	62		
Furniture and related product manufacturing	337	1,059	970	999	917		
Miscellaneous manufacturing	339	467	424	399	439		
Non-durable goods industries		19,565	17,516	17,956	18,252		
Durable goods industries		26,074	23,312	23,919	21,469		
Manufacturing		45,639	40,828	41,875	39,721		
		Previous year		Year-to-date		Annual	
		March 2002	February 2002	% Change from 2002	2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	4,982	4,606	3.5	14,788	1.1	62,911
Beverage and tobacco product manufacturing	312	1,055	851	2.9	2,837	3.7	13,304
Textile mills	313	281	274	-9.2	733	-3.7	3,210
Textile product mills	314	212	193	-6.0	554	0.5	2,520
Clothing manufacturing	315	588	576	-3.4	1,573	-3.0	6,785
Leather and allied product manufacturing	316	62	51	-16.3	139	-9.9	777
Wood product manufacturing	321	2,559	2,246	-3.9	6,662	7.2	29,498
Paper manufacturing	322	2,673	2,496	2.2	7,986	-4.4	32,726
Printing and related support activities	323	871	772	2.7	2,470	-4.1	10,061
Petroleum and coal products manufacturing	324	2,434	1,995	52.1	9,963	1.1	32,350
Chemical manufacturing	325	3,014	2,753	15.8	9,956	4.0	37,769
Plastics and rubber products manufacturing	326	1,863	1,708	6.9	5,611	6.7	23,002
Non-metallic mineral product manufacturing	327	728	637	12.2	2,240	9.7	11,586
Primary metal manufacturing	331	2,678	2,450	12.0	8,610	8.8	32,216
Fabricated metal product manufacturing	332	2,226	2,112	2.8	6,589	2.8	27,510
Machinery manufacturing	333	2,108	1,824	-2.0	5,784	1.3	24,113
Computer and electronic product manufacturing	334	2,104	1,600	-13.0	4,552	-16.5	21,255
Electrical equipment, appliance and component manufacturing	335	815	743	-3.6	2,228	-7.6	9,335
Transportation equipment manufacturing	336	10,384	9,940	3.5	30,749	4.6	119,746
Motor vehicle manufacturing	3361	5,737	5,774	3.9	16,975	5.7	65,797
Motor vehicle body and trailer manufacturing	3362	238	206	3.8	685	8.5	2,704
Motor vehicle parts manufacturing	3363	2,835	2,600	3.8	8,318	10.2	32,741
Aerospace product and parts manufacturing	3364	1,135	886	-1.7	3,152	-15.0	12,472
Railroad rolling stock manufacturing	3365	255	245	11.5	812	5.4	2,878
Ship and boat building	3366	105	152	-26.0	256	20.6	1,242
Furniture and related product manufacturing	337	1,054	965	2.7	3,029	2.4	12,303
Miscellaneous manufacturing	339	420	409	5.9	1,290	8.5	5,527
Non-durable goods industries		17,448	15,697	11.8	55,037	1.1	218,631
Durable goods industries		25,663	23,501	1.9	73,305	2.5	299,874
Manufacturing		43,111	39,198	5.9	128,342	1.9	518,505

Table 5
Inventories by major group and selected industries

	NAICS Code	Unadjusted					
		Current periods					
		March 2003	February 2003	January 2003	December 2002		
		\$ millions					
Food manufacturing	311	4,930	4,872	4,866	4,840		
Beverage and tobacco product manufacturing	312	1,804	1,766	1,705	1,647		
Textile mills	313	460	459	459	447		
Textile product mills	314	319	307	300	309		
Clothing manufacturing	315	1,186	1,169	1,143	1,130		
Leather and allied product manufacturing	316	123	124	121	118		
Wood product manufacturing	321	5,430	5,167	4,709	4,346		
Paper manufacturing	322	3,622	3,575	3,496	3,460		
Printing and related support activities	323	708	669	639	654		
Petroleum and coal products manufacturing	324	1,702	1,615	1,638	1,526		
Chemical manufacturing	325	6,115	5,914	5,593	5,534		
Plastics and rubber products manufacturing	326	2,223	2,155	2,148	2,132		
Non-metallic mineral product manufacturing	327	1,232	1,225	1,221	1,191		
Primary metal manufacturing	331	4,837	4,950	4,987	5,056		
Fabricated metal product manufacturing	332	3,702	3,666	3,594	3,425		
Machinery manufacturing	333	4,701	4,717	4,612	4,489		
Computer and electronic product manufacturing	334	4,266	4,421	4,425	4,367		
Electrical equipment, appliance and component manufacturing	335	1,369	1,347	1,344	1,327		
Transportation equipment manufacturing	336	13,453	13,438	13,008	13,875		
Motor vehicle manufacturing	3361	1,598	1,680	1,650	1,785		
Motor vehicle body and trailer manufacturing	3362	499	509	452	434		
Motor vehicle parts manufacturing	3363	1,923	1,951	1,935	1,904		
Aerospace product and parts manufacturing	3364	7,866	7,677	7,326	7,965		
Railroad rolling stock manufacturing	3365	1,232	1,282	1,322	1,431		
Ship and boat building	3366	131	133	135	133		
Furniture and related product manufacturing	337	1,546	1,492	1,482	1,449		
Miscellaneous manufacturing	339	1,095	1,083	1,093	1,066		
Non-durable goods industries		22,005	21,457	20,964	20,667		
Durable goods industries		42,817	42,674	41,618	41,722		
Manufacturing		64,822	64,131	62,582	62,389		
		Previous year		Year-to-date		Average per month	
		March 2002	February 2002	% Change from 2002	Average 2003	% Change from 2001	2002
		\$ millions					
Food manufacturing	311	4,722	4,732	2.8	4,890	3.4	4,832
Beverage and tobacco product manufacturing	312	1,743	1,682	4.3	1,758	5.0	1,717
Textile mills	313	521	531	-12.3	460	-9.3	486
Textile product mills	314	323	311	-2.5	309	-13.1	324
Clothing manufacturing	315	1,178	1,146	1.2	1,166	-12.5	1,174
Leather and allied product manufacturing	316	130	123	-2.4	123	-8.9	137
Wood product manufacturing	321	5,222	5,109	1.4	5,102	-6.3	4,449
Paper manufacturing	322	3,626	3,638	-1.8	3,564	-7.0	3,548
Printing and related support activities	323	734	712	-6.6	672	-5.7	702
Petroleum and coal products manufacturing	324	1,644	1,715	-0.8	1,652	-10.6	1,614
Chemical manufacturing	325	5,258	5,131	13.6	5,874	4.0	5,277
Plastics and rubber products manufacturing	326	2,014	2,014	8.2	2,175	0.8	2,039
Non-metallic mineral product manufacturing	327	1,262	1,226	0.9	1,226	2.0	1,206
Primary metal manufacturing	331	4,452	4,495	9.3	4,925	0.4	4,657
Fabricated metal product manufacturing	332	3,465	3,454	6.4	3,654	2.1	3,492
Machinery manufacturing	333	4,645	4,715	-0.1	4,677	1.2	4,609
Computer and electronic product manufacturing	334	4,819	5,160	-13.8	4,371	-22.5	4,654
Electrical equipment, appliance and component manufacturing	335	1,412	1,404	-3.0	1,353	-16.3	1,384
Transportation equipment manufacturing	336	13,219	13,214	1.5	13,300	-1.3	13,441
Motor vehicle manufacturing	3361	1,650	1,772	-4.7	1,643	2.9	1,730
Motor vehicle body and trailer manufacturing	3362	428	428	18.2	487	-6.3	417
Motor vehicle parts manufacturing	3363	1,689	1,683	14.3	1,936	3.9	1,762
Aerospace product and parts manufacturing	3364	7,838	7,612	0.5	7,623	0.3	7,817
Railroad rolling stock manufacturing	3365	1,233	1,266	0.8	1,278	-14.0	1,338
Ship and boat building	3366	129	251	-36.3	133	-35.7	145
Furniture and related product manufacturing	337	1,386	1,383	10.2	1,507	1.1	1,427
Miscellaneous manufacturing	339	1,028	1,010	7.7	1,090	3.3	1,059
Non-durable goods industries		20,715	20,589	4.2	21,475	-0.7	20,676
Durable goods industries		42,087	42,314	1.0	42,370	-4.7	41,553
Manufacturing		62,802	62,903	2.0	63,845	-3.4	62,229

Table 5
Inventories by major group and selected industries - concluded

	NAICS Code	Change from February	Seasonally adjusted						
			Current periods						
			March 2003	February 2003	January 2003	December 2002			
			\$ millions						
Food manufacturing	311	46	5,014	4,968	4,909	4,909			
Beverage and tobacco product manufacturing	312	-5	1,746	1,751	1,728	1,715			
Textile mills	313	3	453	450	453	450			
Textile product mills	314	8	314	306	301	313			
Clothing manufacturing	315	-5	1,192	1,198	1,184	1,175			
Leather and allied product manufacturing	316	-8	129	136	133	133			
Wood product manufacturing	321	94	4,644	4,549	4,474	4,443			
Paper manufacturing	322	23	3,539	3,517	3,482	3,527			
Printing and related support activities	323	22	691	669	652	680			
Petroleum and coal products manufacturing	324	36	1,632	1,595	1,631	1,621			
Chemical manufacturing	325	120	5,901	5,781	5,568	5,634			
Plastics and rubber products manufacturing	326	40	2,173	2,133	2,144	2,176			
Non-metallic mineral product manufacturing	327	-24	1,179	1,204	1,224	1,221			
Primary metal manufacturing	331	-6	5,011	5,017	4,967	4,903			
Fabricated metal product manufacturing	332	35	3,674	3,640	3,596	3,465			
Machinery manufacturing	333	22	4,705	4,683	4,637	4,602			
Computer and electronic product manufacturing	334	-61	4,293	4,353	4,387	4,424			
Electrical equipment, appliance and component manufacturing	335	4	1,362	1,358	1,361	1,365			
Transportation equipment manufacturing	336	-148	13,416	13,565	13,470	13,804			
Motor vehicle manufacturing	3361	-70	1,576	1,645	1,642	1,831			
Motor vehicle body and trailer manufacturing	3362	-18	471	489	466	454			
Motor vehicle parts manufacturing	3363	-25	1,910	1,935	1,908	1,920			
Aerospace product and parts manufacturing	3364	37	7,898	7,861	7,781	7,811			
Railroad rolling stock manufacturing	3365	-50	1,232	1,282	1,322	1,431			
Ship and boat building	3366	1	125	125	128	127			
Furniture and related product manufacturing	337	54	1,541	1,487	1,498	1,483			
Miscellaneous manufacturing	339	9	1,085	1,077	1,115	1,117			
Non-durable goods industries		286	21,593	21,307	21,002	21,158			
Durable goods industries		-27	42,102	42,130	41,913	42,003			
Manufacturing		258	63,695	63,436	62,914	63,161			
			Change from previous month		Trend change from previous month				
			March 2003	February 2003	January 2003	March 2003	February 2003	January 2003	December 2002
			percentage						
Food manufacturing	311	0.9	1.2	0.0	0.4	0.5	0.5	0.5	
Beverage and tobacco product manufacturing	312	-0.3	1.3	0.7	-0.1	-0.1	-0.1	-0.1	
Textile mills	313	0.7	-0.6	0.8	-0.3	-0.5	-0.6	-0.8	
Textile product mills	314	2.6	1.5	-3.6	0.0	-0.4	-0.8	-1.2	
Clothing manufacturing	315	-0.4	1.1	0.8	0.1	0.2	0.2	0.3	
Leather and allied product manufacturing	316	-5.6	2.5	0.1	-0.1	-0.3	-0.5	-0.6	
Wood product manufacturing	321	2.1	1.7	0.7	0.7	0.7	0.7	0.6	
Paper manufacturing	322	0.6	1.0	-1.3	0.1	0.1	0.0	0.0	
Printing and related support activities	323	3.3	2.7	-4.1	0.5	0.3	0.0	-0.2	
Petroleum and coal products manufacturing	324	2.3	-2.2	0.6	0.1	0.1	0.0	0.0	
Chemical manufacturing	325	2.1	3.8	-1.2	1.1	1.3	1.4	1.5	
Plastics and rubber products manufacturing	326	1.9	-0.5	-1.5	0.4	0.6	0.7	0.9	
Non-metallic mineral product manufacturing	327	-2.0	-1.7	0.2	-0.6	-0.6	-0.4	-0.2	
Primary metal manufacturing	331	-0.1	1.0	1.3	0.5	0.6	0.8	1.0	
Fabricated metal product manufacturing	332	1.0	1.2	3.8	0.6	0.7	0.6	0.4	
Machinery manufacturing	333	0.5	1.0	0.8	0.3	0.4	0.4	0.4	
Computer and electronic product manufacturing	334	-1.4	-0.8	-0.8	-0.4	-0.5	-0.5	-0.5	
Electrical equipment, appliance and component manufacturing	335	0.3	-0.2	-0.3	0.0	-0.1	-0.2	-0.3	
Transportation equipment manufacturing	336	-1.1	0.7	-2.4	-0.1	-0.1	-0.1	0.0	
Motor vehicle manufacturing	3361	-4.2	0.2	-10.3	-1.2	-1.4	-1.4	-1.2	
Motor vehicle body and trailer manufacturing	3362	-3.7	4.9	2.7	0.9	1.4	1.8	2.1	
Motor vehicle parts manufacturing	3363	-1.3	1.4	-0.6	1.2	1.4	1.5	1.5	
Aerospace product and parts manufacturing	3364	0.5	1.0	-0.4	0.1	0.1	0.1	0.1	
Railroad rolling stock manufacturing	3365	-3.9	-3.0	-7.6	-2.1	-2.5	-2.4	-1.7	
Ship and boat building	3366	0.6	-2.8	1.0	-0.9	-0.4	0.1	0.7	
Furniture and related product manufacturing	337	3.6	-0.7	1.0	0.3	0.4	0.5	0.6	
Miscellaneous manufacturing	339	0.8	-3.4	-0.2	-0.4	-0.4	-0.3	-0.1	
Non-durable goods industries		1.3	1.5	-0.7	0.5	0.5	0.5	0.5	
Durable goods industries		-0.1	0.5	-0.2	0.1	0.1	0.2	0.2	
Manufacturing		0.4	0.8	-0.4	0.2	0.3	0.3	0.3	

Table 6
Unfilled orders by selected major group and industries

	NAICS Code	Unadjusted					
		Current periods					
		March 2003	February 2003	January 2003	December 2002		
\$ millions							
Textile mills	313	270	266	265	262		
Textile product mills	314	67	74	75	60		
Clothing manufacturing	315	331	284	280	276		
Leather and allied product manufacturing	316	31	25	22	22		
Plastics and rubber products manufacturing	326	1,307	1,250	1,328	1,361		
Primary metal manufacturing	331	1,801	1,840	1,838	1,798		
Fabricated metal product manufacturing	332	2,885	2,886	2,872	2,785		
Machinery manufacturing	333	7,271	6,826	6,409	6,497		
Computer and electronic product manufacturing	334	4,072	4,012	4,186	4,097		
Electrical equipment, appliance and component manufacturing	335	1,014	1,032	1,041	1,003		
Transportation equipment manufacturing	336	20,574	21,320	21,543	23,579		
Motor vehicle manufacturing	3361	861	912	921	987		
Motor vehicle body and trailer manufacturing	3362	619	647	648	574		
Motor vehicle parts manufacturing	3363	854	874	913	868		
Aerospace product and parts manufacturing	3364	13,382	13,761	14,135	16,001		
Ship and boat building	3366	33	36	25	23		
Miscellaneous manufacturing	339	164	181	213	214		
Non-durable goods industries		3,032	3,031	3,001	2,968		
Durable goods industries		39,479	39,702	39,744	41,567		
Manufacturing		42,511	42,733	42,745	44,536		
		Previous year		Year-to-date		Average per month	
		March 2002	February 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
Textile mills	313	294	279	-4.0	267	9.3	276
Textile product mills	314	52	49	44.5	72	2.7	55
Clothing manufacturing	315	356	328	-11.5	298	-7.0	324
Leather and allied product manufacturing	316	28	22	1.2	26	-18.2	31
Plastics and rubber products manufacturing	326	1,225	1,252	5.4	1,295	15.6	1,254
Primary metal manufacturing	331	1,805	1,730	8.0	1,827	25.1	1,795
Fabricated metal product manufacturing	332	3,007	3,015	-1.5	2,881	0.3	2,878
Machinery manufacturing	333	7,056	7,028	-1.9	6,835	4.3	6,709
Computer and electronic product manufacturing	334	3,698	3,568	13.3	4,090	-8.4	3,977
Electrical equipment, appliance and component manufacturing	335	951	970	8.4	1,029	-30.5	977
Transportation equipment manufacturing	336	25,369	25,634	-17.4	21,146	-8.7	25,566
Motor vehicle manufacturing	3361	989	956	-7.4	898	4.2	1,052
Motor vehicle body and trailer manufacturing	3362	599	585	9.1	638	8.4	590
Motor vehicle parts manufacturing	3363	640	633	39.3	881	24.2	729
Aerospace product and parts manufacturing	3364	18,611	18,834	-27.0	13,759	-12.0	17,877
Ship and boat building	3366	18	16	89.2	32	-37.0	18
Miscellaneous manufacturing	339	220	245	-21.1	186	-12.1	226
Non-durable goods industries		2,800	2,806	8.3	3,021	15.3	2,867
Durable goods industries		43,630	43,709	-8.7	39,642	-5.4	43,740
Manufacturing		46,430	46,515	-7.7	42,663	-4.3	46,606

Table 6

Unfilled orders by selected major group and industries - concluded

	NAICS Code	Change from February	Seasonally adjusted						
			Current periods						
			March 2003	February 2003	January 2003	December 2002			
			\$ millions						
Textile mills	313	-2	249	251	268	277			
Textile product mills	314	-10	66	76	75	67			
Clothing manufacturing	315	17	314	297	290	305			
Leather and allied product manufacturing	316	-4	31	34	34	33			
Plastics and rubber products manufacturing	326	119	1,317	1,197	1,287	1,307			
Primary metal manufacturing	331	-22	1,755	1,777	1,854	1,908			
Fabricated metal product manufacturing	332	-1	2,885	2,886	2,872	2,785			
Machinery manufacturing	333	446	7,271	6,826	6,409	6,497			
Computer and electronic product manufacturing	334	60	4,072	4,012	4,186	4,097			
Electrical equipment, appliance and component manufacturing	335	-17	1,014	1,032	1,041	1,003			
Transportation equipment manufacturing	336	-694	20,988	21,682	22,032	23,659			
Motor vehicle manufacturing	3361	-52	861	912	921	987			
Motor vehicle body and trailer manufacturing	3362	-23	574	597	625	587			
Motor vehicle parts manufacturing	3363	-1	870	871	897	866			
Aerospace product and parts manufacturing	3364	-351	13,823	14,174	14,660	16,068			
Ship and boat building	3366	-4	34	38	27	25			
Miscellaneous manufacturing	339	-7	168	175	205	217			
Non-durable goods industries		44	3,020	2,976	2,976	2,948			
Durable goods industries		-205	39,836	40,041	40,290	41,872			
Manufacturing		-161	42,856	43,017	43,266	44,820			
			Change from previous month		Trend change from previous month				
			March 2003	February 2003	January 2003	March 2003	February 2003	January 2003	December 2002
			percentage						
Textile mills	313	-0.7	-6.4	-3.2	-2.2	-2.2	-2.0	-1.4	
Textile product mills	314	-12.8	1.3	11.2	0.4	1.8	3.2	4.4	
Clothing manufacturing	315	5.6	2.7	-5.1	1.3	1.0	0.5	-0.1	
Leather and allied product manufacturing	316	-11.5	1.2	2.3	-1.0	-0.5	0.4	1.5	
Plastics and rubber products manufacturing	326	10.0	-6.9	-1.5	0.0	-0.1	0.0	0.1	
Primary metal manufacturing	331	-1.2	-4.2	-2.8	-1.6	-1.3	-0.8	-0.3	
Fabricated metal product manufacturing	332	0.0	0.5	3.1	0.2	0.3	0.3	0.1	
Machinery manufacturing	333	6.5	6.5	-1.4	0.4	0.3	0.1	-0.1	
Computer and electronic product manufacturing	334	1.5	-4.2	2.2	-0.7	-0.6	-0.4	-0.1	
Electrical equipment, appliance and component manufacturing	335	-1.7	-0.9	3.8	0.0	0.0	0.1	0.3	
Transportation equipment manufacturing	336	-3.2	-1.6	-6.9	-2.6	-3.1	-3.3	-3.1	
Motor vehicle manufacturing	3361	-5.7	-0.9	-6.7	-4.0	-4.8	-5.0	-4.5	
Motor vehicle body and trailer manufacturing	3362	-3.8	-4.5	6.4	-1.3	-1.3	-1.2	-1.1	
Motor vehicle parts manufacturing	3363	-0.2	-2.9	3.6	0.0	0.6	1.4	2.3	
Aerospace product and parts manufacturing	3364	-2.5	-3.3	-8.8	-2.6	-3.2	-3.4	-3.4	
Ship and boat building	3366	-10.0	41.6	10.3	7.7	9.9	11.9	13.4	
Miscellaneous manufacturing	339	-3.9	-15.0	-5.5	-5.2	-5.4	-4.7	-3.3	
Non-durable goods industries		1.5	0.0	1.0	0.0	0.1	0.2	0.3	
Durable goods industries		-0.5	-0.6	-3.8	-1.5	-1.8	-1.9	-1.8	
Manufacturing		-0.4	-0.6	-3.5	-1.4	-1.7	-1.8	-1.7	

Table 7

New orders by selected major group and industries

	NAICS Code	Unadjusted				
		Current periods				
		March 2003	February 2003	January 2003	December 2002	
		\$ millions				
Textile mills	313	270	233	238	214	
Textile product mills	314	186	182	192	176	
Clothing manufacturing	315	605	537	487	439	
Leather and allied product manufacturing	316	55	48	45	53	
Plastics and rubber products manufacturing	326	2,025	1,706	1,827	1,542	
Primary metal manufacturing	331	2,891	2,731	2,990	2,521	
Fabricated metal product manufacturing	332	2,339	2,122	2,228	1,793	
Machinery manufacturing	333	2,593	2,239	1,725	2,060	
Computer and electronic product manufacturing	334	1,826	1,216	1,484	1,728	
Electrical equipment, appliance and component manufacturing	335	784	688	768	692	
Transportation equipment manufacturing	336	10,108	9,544	8,093	6,693	
Motor vehicle manufacturing	3361	5,999	5,505	5,345	4,008	
Motor vehicle body and trailer manufacturing	3362	231	201	297	210	
Motor vehicle parts manufacturing	3363	2,842	2,665	2,797	2,071	
Aerospace product and parts manufacturing	3364	716	555	-738	401	
Ship and boat building	3366	99	87	81	63	
Miscellaneous manufacturing	339	449	393	398	404	
Non-durable goods industries		19,566	17,546	17,989	18,177	
Durable goods industries		25,851	23,270	22,096	19,878	
Manufacturing		45,417	40,816	40,085	38,054	
		Previous year		Year-to-date	Average per month	
		March 2002	February 2002	% Change from 2002	2003	% Change from 2001
		\$ millions				
Textile mills	313	296	291	-16.1	742	-0.8
Textile product mills	314	215	195	-6.3	560	2.0
Clothing manufacturing	315	617	577	-3.9	1,629	-2.2
Leather and allied product manufacturing	316	67	47	-10.1	148	-10.6
Plastics and rubber products manufacturing	326	1,836	1,750	7.0	5,557	6.2
Primary metal manufacturing	331	2,752	2,641	5.9	8,613	10.9
Fabricated metal product manufacturing	332	2,254	2,377	0.1	6,689	2.6
Machinery manufacturing	333	2,136	2,035	7.0	6,557	-3.3
Computer and electronic product manufacturing	334	2,234	1,600	-14.1	4,526	-8.9
Electrical equipment, appliance and component manufacturing	335	795	786	1.8	2,239	1.6
Transportation equipment manufacturing	336	10,119	9,811	-3.9	27,745	3.6
Motor vehicle manufacturing	3361	5,770	5,764	2.6	16,848	6.4
Motor vehicle body and trailer manufacturing	3362	251	220	1.1	729	8.7
Motor vehicle parts manufacturing	3363	2,842	2,610	3.2	8,304	11.0
Aerospace product and parts manufacturing	3364	912	641	-77.4	533	-39.5
Ship and boat building	3366	107	153	-23.6	267	24.0
Miscellaneous manufacturing	339	394	413	2.9	1,240	8.5
Non-durable goods industries		17,442	15,741	11.9	55,101	1.0
Durable goods industries		25,619	24,236	-1.4	71,217	3.2
Manufacturing		43,060	39,977	4.0	126,318	2.3

Table 7

New orders by selected major group and industries - concluded

	NAICS Code	Change from February	Seasonally adjusted						
			Current periods						
			March 2003	February 2003	January 2003	December 2002			
			\$ millions						
Textile mills	313	21	250	229	244	250			
Textile product mills	314	-19	182	202	208	207			
Clothing manufacturing	315	0	543	543	552	590			
Leather and allied product manufacturing	316	-4	53	58	61	69			
Plastics and rubber products manufacturing	326	187	2,060	1,874	2,001	1,940			
Primary metal manufacturing	331	-2	2,792	2,794	2,862	2,739			
Fabricated metal product manufacturing	332	-13	2,344	2,357	2,433	2,117			
Machinery manufacturing	333	77	2,449	2,372	1,859	2,057			
Computer and electronic product manufacturing	334	215	1,607	1,392	1,719	1,508			
Electrical equipment, appliance and component manufacturing	335	-6	731	737	819	736			
Transportation equipment manufacturing	336	83	9,575	9,493	8,497	8,007			
Motor vehicle manufacturing	3361	289	5,623	5,333	5,411	4,689			
Motor vehicle body and trailer manufacturing	3362	22	218	196	271	234			
Motor vehicle parts manufacturing	3363	8	2,758	2,750	2,821	2,490			
Aerospace product and parts manufacturing	3364	131	721	590	380	560			
Ship and boat building	3366	-10	80	91	95	80			
Miscellaneous manufacturing	339	29	467	438	458	478			
Non-durable goods industries		348	19,681	19,333	19,338	19,037			
Durable goods industries		346	24,852	24,506	23,694	22,653			
Manufacturing		694	44,533	43,839	43,032	41,690			
			Change from previous month		Trend change from previous month				
			March 2003	February 2003	January 2003	March 2003	February 2003	January 2003	December 2002
			percentage						
Textile mills	313	9.2	-6.1	-2.2	-0.2	-0.2	-0.8	-1.3	-1.6
Textile product mills	314	-9.5	-3.3	0.8	-1.1	-1.1	-1.3	-1.4	-1.3
Clothing manufacturing	315	0.0	-1.6	-6.5	-1.3	-1.1	-0.7	-0.7	-0.1
Leather and allied product manufacturing	316	-7.2	-5.9	-11.5	-1.9	-2.5	-2.7	-2.7	-2.4
Plastics and rubber products manufacturing	326	10.0	-6.4	3.2	0.2	0.1	0.0	0.0	-0.1
Primary metal manufacturing	331	-0.1	-2.4	4.5	-0.2	-0.1	0.1	0.1	0.4
Fabricated metal product manufacturing	332	-0.5	-3.1	14.9	0.3	0.5	0.7	0.7	0.7
Machinery manufacturing	333	3.3	27.6	-9.6	0.6	0.3	0.4	0.4	0.2
Computer and electronic product manufacturing	334	15.5	-19.0	14.0	-1.0	-1.7	-2.5	-2.5	-3.1
Electrical equipment, appliance and component manufacturing	335	-0.8	-10.1	11.3	-0.2	-0.4	-0.6	-0.6	-0.8
Transportation equipment manufacturing	336	0.9	11.7	6.1	1.3	0.5	-0.4	-0.4	-1.3
Motor vehicle manufacturing	3361	5.4	-1.4	15.4	0.4	0.0	-0.5	-0.5	-0.9
Motor vehicle body and trailer manufacturing	3362	11.4	-27.8	15.6	0.7	0.5	0.3	0.3	0.0
Motor vehicle parts manufacturing	3363	0.3	-2.5	13.3	-0.4	-0.5	-0.5	-0.5	-0.3
Aerospace product and parts manufacturing	3364	22.2	55.4	-32.2	17.0	12.1	4.3	4.3	-3.1
Ship and boat building	3366	-11.5	-4.3	19.2	0.8	0.3	-0.8	-0.8	-2.2
Miscellaneous manufacturing	339	6.7	-4.5	-4.1	0.3	-0.1	-0.5	-0.5	-0.8
Non-durable goods industries		1.8	0.0	1.6	0.6	0.6	0.6	0.6	0.7
Durable goods industries		1.4	3.4	4.6	0.4	0.0	-0.4	-0.4	-0.7
Manufacturing		1.6	1.9	3.2	0.4	0.3	0.1	0.1	-0.1

Table 8a
Shipments for selected industries, unadjusted

	NAICS Code	Current periods			
		March 2003	February 2003	January 2003	December 2002
		\$ millions			
Food manufacturing	311				
Animal food manufacturing	3111	430	405	446	450
Starch and vegetable fat and oil manufacturing	31122	268	232	231	238
Sugar and confectionery product manufacturing	3113	338	304	266	357
Fruit and vegetable preserving and specialty food manufacturing	3114	482	443	468	496
Dairy product manufacturing	3115	874	802	835	862
Meat product manufacturing	3116	1,465	1,337	1,381	1,533
Cookie, cracker and pasta manufacturing	31182	112	112	102	117
Other food manufacturing	3119	506	430	425	506
Beverage and tobacco product manufacturing	312				
Soft drink and ice manufacturing	31211	316	248	227	330
Breweries	31212	300	236	226	374
Wineries	31213	46	38	34	55
Distilleries	31214	96	93	97	105
Tobacco manufacturing	3122	327	291	261	343
Textile mills	313				
Fibre, yarn and thread mills	3131	39	35	33	30
Fabric mills	3132	176	150	155	147
Textile and fabric finishing and fabric coating	3133	50	48	48	46
Textile product mills	314				
Carpet and rug mills	31411	73	68	68	64
Textile bag and canvas mills	31491	24	22	18	25
Clothing manufacturing	315				
Hosiery and sock mills	31511	39	35	40	39
Other clothing knitting mills	31519	39	43	42	45
Men's and boys' cut and sew clothing manufacturing	31522	179	181	170	172
Women's and girls' cut and sew clothing manufacturing	31523	208	188	156	125
Clothing accessories and other clothing manufacturing	3159	19	16	17	15
Leather and allied product manufacturing	316				
Footwear manufacturing	3162	27	25	27	36
Wood product manufacturing	321				
Sawmills and wood preservation	3211	1,323	1,225	1,238	1,173
Veneer, plywood and engineered wood product manufacturing	3212	524	499	496	455
Other wood product manufacturing	3219	474	449	435	422
Paper manufacturing	322				
Pulp, paper and paperboard mills	3221	1,954	1,764	1,905	1,913
Paperboard container manufacturing	32221	472	418	427	389
Paper bag and coated and treated paper manufacturing	32222	192	179	179	161
Other converted paper product manufacturing	32229	132	121	133	132
Printing and related support activities	323				
Printing	32311	861	732	754	775
Support activities for printing	32312	44	40	38	40
Petroleum and coal products manufacturing	324				
Petroleum refineries	32411	3,394	3,036	2,988	2,877
Chemical manufacturing	325				
Other basic inorganic chemical manufacturing	32518	240	237	247	227
Other basic organic chemical manufacturing	32519	264	210	232	234
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	633	544	574	490
Pesticide and other agricultural chemical manufacturing	32532	73	37	29	11
Pharmaceutical and medicine manufacturing	3254	754	619	715	837
Paint and coating manufacturing	32551	169	136	139	107
Adhesive manufacturing	32552	55	50	44	36
Soap and cleaning compound manufacturing	32561	123	119	125	112
Toilet preparation manufacturing	32562	157	149	148	135
Printing ink manufacturing	32591	35	33	33	29
All other chemical product manufacturing	32599	366	349	345	325

Table 8a

Shipments for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		March 2003	February 2003	January 2003	December 2002
		\$ millions			
Plastics and rubber products manufacturing	326				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	142	128	126	105
Polystyrene foam product manufacturing	32614	29	22	21	21
Other plastic product manufacturing	32619	763	681	741	659
Other rubber product manufacturing	32629	223	193	194	158
Non-metallic mineral product manufacturing	327				
Clay product and refractory manufacturing	3271	53	47	47	42
Glass and glass product manufacturing	3272	201	173	186	149
Cement manufacturing	32731	79	58	58	76
Ready-mix concrete manufacturing	32732	122	94	89	132
Other concrete product manufacturing	32739	83	57	55	79
Abrasive product manufacturing	32791	40	36	39	40
All other non-metallic mineral product manufacturing	32799	109	104	110	109
Primary metal manufacturing	331				
Iron and steel mills and ferro-alloy manufacturing	3311	923	866	1,036	811
Iron and steel pipes and tubes manufacturing from purchased steel	33121	262	252	258	206
Foundries	3315	298	266	279	217
Fabricated metal product manufacturing	332				
Cutlery and hand tool manufacturing	3322	51	47	47	42
Plate work and fabricated structural product manufacturing	33231	340	288	332	304
Power boiler and heat exchanger manufacturing	33241	107	80	74	84
Spring and wire product manufacturing	3326	120	114	120	96
Coating, engraving, heat treating and allied activities	3328	238	220	228	187
Other fabricated metal product manufacturing	3329	260	251	235	185
Machinery manufacturing	333				
Agricultural implement manufacturing	33311	215	175	150	161
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	187	161	168	158
All other general-purpose machinery manufacturing	33399	173	108	144	167
Computer and electronic product manufacturing	334				
Computer and peripheral equipment manufacturing	3341	446	269	251	400
Communications equipment manufacturing	3342	492	399	388	685
Audio and video equipment manufacturing	3343	14	17	17	21
Electrical equipment, appliance and component manufacturing	335				
Lighting fixture manufacturing	33512	64	60	71	63
Small electrical appliance manufacturing	33521	22	17	21	19
Major appliance manufacturing	33522	130	122	122	104
Battery manufacturing	33591	13	11	12	12
Communication and energy wire and cable manufacturing	33592	108	88	85	89
All other electrical equipment and component manufacturing	33599	63	62	66	61
Transportation equipment manufacturing	336				
Motor vehicle manufacturing	3361	6,050	5,513	5,411	4,043
Motor vehicle parts manufacturing	3363	2,862	2,704	2,752	2,114
Aerospace product and parts manufacturing	3364	1,094	930	1,128	1,121
Railroad rolling stock manufacturing	3365	292	217	303	225
Ship and boat building	3366	102	75	79	62
Furniture and related product manufacturing	337				
Household and institutional furniture and kitchen cabinet manufacturing	3371	576	547	562	508
Office furniture (including fixtures) manufacturing	3372	417	365	372	350
Miscellaneous manufacturing	339				
Medical equipment and supplies manufacturing	3391	124	110	104	111
Other miscellaneous manufacturing	3399	342	315	295	328

Table 8a

Shipments for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Annual	
		March 2002	February 2002	% Change from 2002	2003	% Change from 2001	2002
\$ millions							
Food manufacturing	311						
Animal food manufacturing	3111	452	394	-0.1	1,281	6.1	5,392
Starch and vegetable fat and oil manufacturing	31122	213	205	14.5	731	3.3	2,811
Sugar and confectionery product manufacturing	3113	299	277	11.9	908	1.4	3,846
Fruit and vegetable preserving and specialty food manufacturing	3114	484	462	-2.9	1,392	-1.7	5,923
Dairy product manufacturing	3115	809	741	8.9	2,510	1.2	9,887
Meat product manufacturing	3116	1,499	1,357	-1.9	4,183	-6.6	17,674
Cookie, cracker and pasta manufacturing	31182	115	124	-9.7	327	-7.7	1,425
Other food manufacturing	3119	455	402	8.1	1,361	11.9	5,723
Beverage and tobacco product manufacturing	312						
Soft drink and ice manufacturing	31211	281	220	10.3	791	5.2	3,688
Breweries	31212	313	250	-3.5	762	2.0	4,103
Wineries	31213	41	31	14.2	117	11.8	585
Distilleries	31214	84	69	7.6	286	9.1	1,265
Tobacco manufacturing	3122	336	281	0.0	880	1.3	3,663
Textile mills	313						
Fibre, yarn and thread mills	3131	42	40	-11.5	107	-5.0	465
Fabric mills	3132	183	179	-8.4	481	-3.2	2,067
Textile and fabric finishing and fabric coating	3133	56	55	-10.0	146	-4.1	678
Textile product mills	314						
Carpet and rug mills	31411	77	71	-1.7	209	-3.6	890
Textile bag and canvas mills	31491	35	30	-35.3	64	7.2	429
Clothing manufacturing	315						
Hosiery and sock mills	31511	43	41	-7.3	114	0.4	511
Other clothing knitting mills	31519	31	32	32.2	123	0.1	519
Men's and boys' cut and sew clothing manufacturing	31522	204	196	-4.2	531	-4.9	2,360
Women's and girls' cut and sew clothing manufacturing	31523	213	211	-5.6	552	-3.7	2,221
Clothing accessories and other clothing manufacturing	3159	21	15	1.1	52	-4.0	242
Leather and allied product manufacturing	316						
Footwear manufacturing	3162	41	31	-26.6	79	-5.8	518
Wood product manufacturing	321						
Sawmills and wood preservation	3211	1,619	1,427	-13.4	3,785	4.4	17,697
Veneer, plywood and engineered wood product manufacturing	3212	530	465	4.1	1,519	6.1	6,230
Other wood product manufacturing	3219	411	354	23.3	1,358	18.2	5,571
Paper manufacturing	322						
Pulp, paper and paperboard mills	3221	1,944	1,805	-0.6	5,622	-6.8	23,505
Paperboard container manufacturing	32221	379	359	17.6	1,316	3.4	4,914
Paper bag and coated and treated paper manufacturing	32222	187	174	0.9	549	3.0	2,212
Other converted paper product manufacturing	32229	125	121	2.1	386	0.6	1,610
Printing and related support activities	323						
Printing	32311	830	730	2.7	2,348	-1.4	9,557
Support activities for printing	32312	41	41	3.4	122	-37.0	504
Petroleum and coal products manufacturing	324						
Petroleum refineries	32411	2,264	1,835	55.9	9,417	0.8	29,276
Chemical manufacturing	325						
Other basic inorganic chemical manufacturing	32518	209	201	17.1	724	6.8	2,726
Other basic organic chemical manufacturing	32519	228	193	17.4	706	1.8	2,521
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	540	479	15.2	1,750	0.6	6,379
Pesticide and other agricultural chemical manufacturing	32532	57	39	8.2	140	-13.4	341
Pharmaceutical and medicine manufacturing	3254	652	594	12.9	2,088	22.0	8,402
Paint and coating manufacturing	32551	167	136	2.6	445	-1.4	1,875
Adhesive manufacturing	32552	54	47	0.6	148	12.2	624
Soap and cleaning compound manufacturing	32561	129	115	0.0	367	-7.5	1,516
Toilet preparation manufacturing	32562	137	139	6.0	454	3.2	1,663
Printing ink manufacturing	32591	36	30	2.6	101	13.3	419
All other chemical product manufacturing	32599	325	299	13.0	1,060	2.6	4,104

Table 8a

Shipments for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Annual	
		March 2002	February 2002	% Change from 2002	2003	% Change from 2001	2002
\$ millions							
Plastics and rubber products manufacturing	326						
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	125	107	16.5	396	4.2	1,758
Polystyrene foam product manufacturing	32614	25	21	4.7	72	3.8	321
Other plastic product manufacturing	32619	744	678	5.4	2,185	8.6	9,435
Other rubber product manufacturing	32629	204	194	4.3	610	0.0	2,409
Non-metallic mineral product manufacturing	327						
Clay product and refractory manufacturing	3271	47	40	13.9	146	5.0	613
Glass and glass product manufacturing	3272	183	167	9.0	560	6.2	2,396
Cement manufacturing	32731	75	63	-2.7	195	5.7	1,425
Ready-mix concrete manufacturing	32732	117	97	-1.6	305	9.1	2,337
Other concrete product manufacturing	32739	62	49	27.2	195	1.3	1,127
Abrasive product manufacturing	32791	37	34	18.4	115	36.5	450
All other non-metallic mineral product manufacturing	32799	85	73	36.1	323	28.8	1,314
Primary metal manufacturing	331						
Iron and steel mills and ferro-alloy manufacturing	3311	827	772	17.9	2,825	11.3	10,368
Iron and steel pipes and tubes manufacturing from purchased steel	33121	196	197	26.9	772	1.4	2,529
Foundries	3315	272	252	7.3	842	8.7	3,161
Fabricated metal product manufacturing	332						
Cutlery and hand tool manufacturing	3322	37	37	32.3	145	6.3	467
Plate work and fabricated structural product manufacturing	33231	326	305	0.6	960	0.4	4,286
Power boiler and heat exchanger manufacturing	33241	69	79	20.6	261	7.6	1,022
Spring and wire product manufacturing	3326	124	117	0.7	354	9.8	1,477
Coating, engraving, heat treating and allied activities	3328	225	202	10.2	685	20.0	2,633
Other fabricated metal product manufacturing	3329	245	239	4.6	747	9.5	3,005
Machinery manufacturing	333						
Agricultural implement manufacturing	33311	223	196	-9.9	540	6.1	2,323
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	178	160	2.1	516	9.7	2,298
All other general-purpose machinery manufacturing	33399	196	159	-18.0	425	15.4	2,275
Computer and electronic product manufacturing	334						
Computer and peripheral equipment manufacturing	3341	476	377	-21.0	966	-16.6	4,699
Communications equipment manufacturing	3342	762	497	-27.5	1,278	-23.7	7,137
Audio and video equipment manufacturing	3343	17	17	-11.2	48	-7.2	218
Electrical equipment, appliance and component manufacturing	335						
Lighting fixture manufacturing	33512	71	64	-2.2	195	-3.7	877
Small electrical appliance manufacturing	33521	17	16	14.4	59	-9.3	250
Major appliance manufacturing	33522	134	120	-0.3	374	12.4	1,529
Battery manufacturing	33591	12	11	3.2	36	-15.1	139
Communication and energy wire and cable manufacturing	33592	136	119	-28.2	281	-42.2	1,436
All other electrical equipment and component manufacturing	33599	61	64	-0.2	191	-2.3	772
Transportation equipment manufacturing	336						
Motor vehicle manufacturing	3361	5,737	5,774	3.9	16,975	5.7	65,797
Motor vehicle parts manufacturing	3363	2,835	2,600	3.8	8,318	10.2	32,741
Aerospace product and parts manufacturing	3364	1,135	886	-1.7	3,152	-15.0	12,472
Railroad rolling stock manufacturing	3365	255	245	11.5	812	5.4	2,878
Ship and boat building	3366	105	152	-26.0	256	20.6	1,242
Furniture and related product manufacturing	337						
Household and institutional furniture and kitchen cabinet manufacturing	3371	619	593	-4.3	1,685	7.7	7,133
Office furniture (including fixtures) manufacturing	3372	369	307	16.2	1,154	-6.0	4,319
Miscellaneous manufacturing	339						
Medical equipment and supplies manufacturing	3391	131	116	-5.4	338	5.3	1,432
Other miscellaneous manufacturing	3399	289	292	10.5	952	9.7	4,095

Table 8b
Inventory owned for selected industries, unadjusted

	NAICS Code	Current periods			
		March 2003	February 2003	January 2003	December 2002
\$ millions					
Food manufacturing	311				
Animal food manufacturing	3111	282	274	258	258
Starch and vegetable fat and oil manufacturing	31122	216	236	224	219
Sugar and confectionery product manufacturing	3113	348	347	353	346
Fruit and vegetable preserving and specialty food manufacturing	3114	873	890	911	927
Dairy product manufacturing	3115	828	783	763	762
Meat product manufacturing	3116	873	861	840	812
Cookie, cracker and pasta manufacturing	31182	125	124	126	124
Other food manufacturing	3119	476	473	465	457
Beverage and tobacco product manufacturing	312				
Soft drink and ice manufacturing	31211	252	239	218	216
Breweries	31212	166	163	161	157
Wineries	31213	228	227	225	220
Distilleries	31214	506	502	506	492
Tobacco manufacturing	3122	652	635	595	563
Textile mills	313				
Fibre, yarn and thread mills	3131	56	55	53	52
Fabric mills	3132	334	333	335	327
Textile and fabric finishing and fabric coating	3133	70	71	71	67
Textile product mills	314				
Carpet and rug mills	31411	80	76	76	75
Textile bag and canvas mills	31491	51	50	50	55
Clothing manufacturing	315				
Hosiery and sock mills	31511	145	139	125	126
Other clothing knitting mills	31519	108	102	96	95
Men's and boys' cut and sew clothing manufacturing	31522	419	391	377	373
Women's and girls' cut and sew clothing manufacturing	31523	310	343	359	352
Clothing accessories and other clothing manufacturing	3159	68	68	63	60
Leather and allied product manufacturing	316				
Footwear manufacturing	3162	80	79	76	74
Wood product manufacturing	321				
Sawmills and wood preservation	3211	3,720	3,515	3,147	2,831
Veneer, plywood and engineered wood product manufacturing	3212	807	765	704	664
Other wood product manufacturing	3219	903	887	858	852
Paper manufacturing	322				
Pulp, paper and paperboard mills	3221	2,553	2,529	2,488	2,478
Paperboard container manufacturing	32221	539	541	510	492
Paper bag and coated and treated paper manufacturing	32222	280	267	269	273
Other converted paper product manufacturing	32229	155	148	143	141
Printing and related support activities	323				
Printing	32311	697	658	628	643
Support activities for printing	32312	10	11	11	11
Petroleum and coal products manufacturing	324				
Petroleum refineries	32411	1,405	1,321	1,338	1,234
Chemical manufacturing	325				
Other basic inorganic chemical manufacturing	32518	182	177	174	180
Other basic organic chemical manufacturing	32519	177	165	151	158
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	572	541	528	532
Pesticide and other agricultural chemical manufacturing	32532	132	118	119	116
Pharmaceutical and medicine manufacturing	3254	3,200	3,134	2,942	2,895
Paint and coating manufacturing	32551	260	251	242	229
Adhesive manufacturing	32552	94	85	84	81
Soap and cleaning compound manufacturing	32561	104	105	108	100
Toilet preparation manufacturing	32562	188	184	188	180
Printing ink manufacturing	32591	47	52	52	49
All other chemical product manufacturing	32599	324	323	316	314

Table 8b

Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Current periods			
		March 2003	February 2003	January 2003	December 2002
		\$ millions			
Plastics and rubber products manufacturing	326				
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	234	225	225	227
Polystyrene foam product manufacturing	32614	40	37	39	35
Other plastic product manufacturing	32619	946	908	908	898
Other rubber product manufacturing	32629	188	188	191	194
Non-metallic mineral product manufacturing	327				
Clay product and refractory manufacturing	3271	92	89	90	90
Glass and glass product manufacturing	3272	283	277	275	265
Cement manufacturing	32731	202	204	203	184
Ready-mix concrete manufacturing	32732	98	95	94	102
Other concrete product manufacturing	32739	87	88	84	80
Abrasive product manufacturing	32791	130	137	138	134
All other non-metallic mineral product manufacturing	32799	149	145	145	142
Primary metal manufacturing	331				
Iron and steel mills and ferro-alloy manufacturing	3311	2,039	2,172	2,226	2,316
Iron and steel pipes and tubes manufacturing from purchased steel	33121	622	594	595	659
Foundries	3315	309	304	291	292
Fabricated metal product manufacturing	332				
Cutlery and hand tool manufacturing	3322	95	92	91	84
Plate work and fabricated structural product manufacturing	33231	465	455	439	430
Power boiler and heat exchanger manufacturing	33241	176	173	175	156
Spring and wire product manufacturing	3326	149	160	161	148
Coating, engraving, heat treating and allied activities	3328	165	170	168	165
Other fabricated metal product manufacturing	3329	567	555	564	547
Machinery manufacturing	333				
Agricultural implement manufacturing	33311	554	550	550	528
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	335	336	327	319
All other general-purpose machinery manufacturing	33399	356	361	379	386
Computer and electronic product manufacturing	334				
Computer and peripheral equipment manufacturing	3341	580	607	594	600
Communications equipment manufacturing	3342	2,153	2,276	2,283	2,212
Audio and video equipment manufacturing	3343	58	56	56	55
Electrical equipment, appliance and component manufacturing	335				
Lighting fixture manufacturing	33512	147	146	151	155
Small electrical appliance manufacturing	33521	48	47	47	46
Major appliance manufacturing	33522	190	171	163	161
Battery manufacturing	33591	62	64	62	60
Communication and energy wire and cable manufacturing	33592	260	264	265	264
All other electrical equipment and component manufacturing	33599	105	106	110	104
Transportation equipment manufacturing	336				
Motor vehicle manufacturing	3361	1,598	1,680	1,650	1,785
Motor vehicle parts manufacturing	3363	1,923	1,951	1,935	1,904
Aerospace product and parts manufacturing	3364	7,866	7,677	7,326	7,965
Railroad rolling stock manufacturing	3365	1,232	1,282	1,322	1,431
Ship and boat building	3366	131	133	135	133
Furniture and related product manufacturing	337				
Household and institutional furniture and kitchen cabinet manufacturing	3371	854	824	817	806
Office furniture (including fixtures) manufacturing	3372	425	405	414	400
Miscellaneous manufacturing	339				
Medical equipment and supplies manufacturing	3391	161	171	169	167
Other miscellaneous manufacturing	3399	935	912	924	900

Table 8b

Inventory owned for selected industries, unadjusted - continued

	NAICS Code	Previous year		Year-to-date		Average per month	
		March 2002	February 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
Food manufacturing	311						
Animal food manufacturing	3111	258	261	3.3	271	7.2	263
Starch and vegetable fat and oil manufacturing	31122	180	184	20.9	225	6.5	189
Sugar and confectionery product manufacturing	3113	338	345	-1.8	349	-1.3	359
Fruit and vegetable preserving and specialty food manufacturing	3114	830	837	5.5	891	7.6	868
Dairy product manufacturing	3115	755	715	9.3	791	5.3	748
Meat product manufacturing	3116	943	969	-9.1	858	-1.6	884
Cookie, cracker and pasta manufacturing	31182	101	127	5.6	125	-1.9	115
Other food manufacturing	3119	464	453	3.1	471	4.4	482
Beverage and tobacco product manufacturing	312						
Soft drink and ice manufacturing	31211	242	206	7.4	236	13.8	253
Breweries	31212	157	148	9.8	163	10.2	168
Wineries	31213	210	212	8.8	227	12.6	209
Distilleries	31214	458	442	13.4	505	12.1	484
Tobacco manufacturing	3122	676	675	-5.4	628	-6.2	602
Textile mills	313						
Fibre, yarn and thread mills	3131	62	63	-14.4	55	-22.3	58
Fabric mills	3132	402	411	-16.8	334	-7.1	368
Textile and fabric finishing and fabric coating	3133	58	57	21.2	70	-7.4	60
Textile product mills	314						
Carpet and rug mills	31411	80	76	-2.3	77	-21.6	81
Textile bag and canvas mills	31491	66	64	-21.4	50	5.1	67
Clothing manufacturing	315						
Hosiery and sock mills	31511	137	132	3.9	136	-0.7	136
Other clothing knitting mills	31519	95	91	10.2	102	0.2	103
Men's and boys' cut and sew clothing manufacturing	31522	359	357	12.3	396	-19.9	369
Women's and girls' cut and sew clothing manufacturing	31523	362	330	-1.2	338	-7.8	351
Clothing accessories and other clothing manufacturing	3159	64	62	5.1	66	-14.6	64
Leather and allied product manufacturing	316						
Footwear manufacturing	3162	83	78	-1.8	78	-10.9	92
Wood product manufacturing	321						
Sawmills and wood preservation	3211	3,708	3,629	-2.7	3,461	-9.8	2,996
Veneer, plywood and engineered wood product manufacturing	3212	721	697	9.3	759	-4.4	652
Other wood product manufacturing	3219	793	783	13.6	883	7.2	801
Paper manufacturing	322						
Pulp, paper and paperboard mills	3221	2,609	2,633	-3.8	2,523	-8.5	2,549
Paperboard container manufacturing	32221	526	522	1.3	530	-5.0	514
Paper bag and coated and treated paper manufacturing	32222	252	256	7.9	272	2.2	254
Other converted paper product manufacturing	32229	144	139	5.0	149	-3.8	147
Printing and related support activities	323						
Printing	32311	719	696	-5.9	661	-4.4	688
Support activities for printing	32312	15	17	-33.4	11	-42.6	14
Petroleum and coal products manufacturing	324						
Petroleum refineries	32411	1,352	1,439	-2.6	1,355	-12.4	1,322
Chemical manufacturing	325						
Other basic inorganic chemical manufacturing	32518	205	204	-13.5	178	-4.3	184
Other basic organic chemical manufacturing	32519	145	149	6.2	164	-23.8	146
Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	536	548	-0.3	547	-18.9	525
Pesticide and other agricultural chemical manufacturing	32532	208	141	-25.4	123	-20.3	133
Pharmaceutical and medicine manufacturing	3254	2,481	2,464	26.6	3,092	32.8	2,665
Paint and coating manufacturing	32551	255	262	-2.4	251	-9.1	249
Adhesive manufacturing	32552	85	82	6.2	88	15.5	81
Soap and cleaning compound manufacturing	32561	147	145	-26.6	106	-11.8	129
Toilet preparation manufacturing	32562	148	156	21.0	187	-6.8	162
Printing ink manufacturing	32591	61	49	-4.6	50	-4.2	50
All other chemical product manufacturing	32599	296	301	7.6	321	-0.9	312

Table 8b

Inventory owned for selected industries, unadjusted - concluded

	NAICS Code	Previous year		Year-to-date		Average per month	
		March 2002	February 2002	% Change from 2002	Average 2003	% Change from 2001	2002
\$ millions							
Plastics and rubber products manufacturing	326						
Plastic pipe, pipe fitting and unsupported profile shape manufacturing	32612	235	229	-0.1	228	-6.3	223
Polystyrene foam product manufacturing	32614	31	29	29.9	38	1.6	31
Other plastic product manufacturing	32619	823	819	13.1	921	7.8	848
Other rubber product manufacturing	32629	186	192	-2.9	189	-7.2	189
Non-metallic mineral product manufacturing	327						
Clay product and refractory manufacturing	3271	91	92	-0.8	90	-12.2	89
Glass and glass product manufacturing	3272	298	278	-1.0	278	2.8	272
Cement manufacturing	32731	217	218	-3.4	203	-1.9	187
Ready-mix concrete manufacturing	32732	105	104	-9.7	96	-8.6	102
Other concrete product manufacturing	32739	90	87	2.2	86	1.3	82
Abrasive product manufacturing	32791	150	139	1.6	135	32.0	151
All other non-metallic mineral product manufacturing	32799	127	128	12.6	146	0.9	141
Primary metal manufacturing	331						
Iron and steel mills and ferro-alloy manufacturing	3311	1,875	1,937	11.4	2,146	-1.1	2,050
Iron and steel pipes and tubes manufacturing from purchased steel	33121	487	491	21.0	604	6.7	543
Foundries	3315	290	286	4.2	301	1.0	287
Fabricated metal product manufacturing	332						
Cutlery and hand tool manufacturing	3322	80	81	15.6	93	9.3	83
Plate work and fabricated structural product manufacturing	33231	451	438	2.4	453	2.9	448
Power boiler and heat exchanger manufacturing	33241	149	143	26.5	175	27.1	148
Spring and wire product manufacturing	3326	151	151	3.2	157	-7.4	154
Coating, engraving, heat treating and allied activities	3328	150	155	11.1	168	16.4	156
Other fabricated metal product manufacturing	3329	542	545	3.2	562	3.6	548
Machinery manufacturing	333						
Agricultural implement manufacturing	33311	520	519	6.8	551	1.5	510
Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	359	356	-5.2	333	6.8	345
All other general-purpose machinery manufacturing	33399	312	365	6.7	365	12.2	363
Computer and electronic product manufacturing	334						
Computer and peripheral equipment manufacturing	3341	641	623	-6.0	594	-42.7	607
Communications equipment manufacturing	3342	2,570	2,798	-18.8	2,237	-19.6	2,447
Audio and video equipment manufacturing	3343	44	45	26.5	57	-10.6	51
Electrical equipment, appliance and component manufacturing	335						
Lighting fixture manufacturing	33512	164	165	-10.2	148	-2.7	160
Small electrical appliance manufacturing	33521	37	37	27.0	47	-19.2	43
Major appliance manufacturing	33522	174	155	8.2	174	10.6	160
Battery manufacturing	33591	76	76	-12.1	63	44.2	70
Communication and energy wire and cable manufacturing	33592	306	307	-13.6	263	-42.2	291
All other electrical equipment and component manufacturing	33599	120	118	-10.7	107	-24.2	111
Transportation equipment manufacturing	336						
Motor vehicle manufacturing	3361	1,650	1,772	-4.7	1,643	2.9	1,730
Motor vehicle parts manufacturing	3363	1,689	1,683	14.3	1,936	3.9	1,762
Aerospace product and parts manufacturing	3364	7,838	7,612	0.5	7,623	0.3	7,817
Railroad rolling stock manufacturing	3365	1,233	1,266	0.8	1,278	-14.0	1,338
Ship and boat building	3366	129	251	-36.3	133	-35.7	145
Furniture and related product manufacturing	337						
Household and institutional furniture and kitchen cabinet manufacturing	3371	724	726	16.3	832	9.7	772
Office furniture (including fixtures) manufacturing	3372	396	399	4.8	415	-11.1	398
Miscellaneous manufacturing	339						
Medical equipment and supplies manufacturing	3391	176	177	-5.8	167	-5.8	180
Other miscellaneous manufacturing	3399	852	833	10.5	923	5.4	879

Table 9
Inventories owned by stage of fabrication

Period covered	Unadjusted			
	Raw materials	Goods in process	Finished products	Total inventories
March 2002	27,254	15,674	19,875	62,802
April 2002	27,133	15,604	19,748	62,485
May 2002	26,681	15,831	19,420	61,933
June 2002	26,301	15,759	19,130	61,190
July 2002	26,991	15,554	18,660	61,205
August 2002	27,198	16,209	18,823	62,231
September 2002	27,108	15,941	19,144	62,193
October 2002	27,379	15,975	18,942	62,295
November 2002	27,237	16,282	19,610	63,129
December 2002	27,600	15,742	19,047	62,389
January 2003	27,872	15,364	19,346	62,582
February 2003	28,296	15,896	19,939	64,131
March 2003	28,387	15,926	20,510	64,822
Period covered	Seasonally adjusted			
	Raw materials	Goods in process	Finished products	Total inventories
March 2002	26,689	15,531	19,505	61,724
April 2002	26,882	15,628	19,351	61,861
May 2002	26,985	15,593	19,078	61,657
June 2002	26,840	15,780	18,992	61,612
July 2002	27,334	15,814	18,811	61,958
August 2002	27,420	16,152	18,835	62,407
September 2002	27,319	15,812	19,189	62,320
October 2002	27,450	15,913	19,217	62,580
November 2002	27,331	16,014	19,643	62,989
December 2002	27,591	15,943	19,626	63,161
January 2003	27,490	15,794	19,631	62,914
February 2003	27,668	15,930	19,839	63,436
March 2003	27,793	15,860	20,042	63,695

Table 10
Shipments by major group and province, unadjusted

Province	Current year			
	March 2003	February 2003	January 2003	December 2002
	\$ millions			
Total				
Newfoundland and Labrador	146	132	145	177
Prince Edward Island	88	77	86	100
Nova Scotia	757	693	698	725
New Brunswick	1,123	969	1,028	1,086
Quebec	10,431	9,303	9,487	9,735
Ontario	24,771	22,184	22,798	20,264
Manitoba	990	916	916	931
Saskatchewan	656	567	596	559
Alberta	3,844	3,391	3,525	3,451
British Columbia	2,829	2,593	2,591	2,691
311 Food manufacturing				
Newfoundland and Labrador	36	37	35	55
Prince Edward Island	63	53	64	76
Nova Scotia	185	168	157	205
New Brunswick	106	97	109	130
Quebec	1,132	1,076	1,059	1,188
Ontario	2,125	1,903	1,942	2,144
Manitoba	255	234	246	268
Saskatchewan	150	137	152	166
Alberta	795	731	750	744
British Columbia	356	308	326	381
312 Beverage and tobacco product manufacturing				
Nova Scotia	18	15	12	20
Quebec	342	252	265	378
Ontario	532	482	420	581
Saskatchewan	5	4	3	5
British Columbia	78	64	60	94
313 Textile mills				
Quebec	169	149	146	149
Ontario	72	66	69	56
314 Textile product mills				
Quebec	80	73	68	71
Ontario	88	87	88	77
Alberta	2	2	2	2
British Columbia	9	7	7	13
315 Clothing manufacturing				
Quebec	341	323	278	251
Ontario	157	149	143	134
Manitoba	24	26	24	27
Saskatchewan	2	2	2	2
Alberta	7	6	7	7
British Columbia	22	23	23	18
316 Leather and allied product manufacturing				
Quebec	24	23	24	24
Ontario	15	12	13	21
321 Wood product manufacturing				
Nova Scotia	40	37	39	38
Quebec	653	605	595	541
Ontario	445	411	423	383
Manitoba	38	31	37	35
Saskatchewan	40	39	36	35
Alberta	175	168	174	157
British Columbia	801	774	755	746

Table 10
Shipments by major group and province, unadjusted - continued

Province	Current year			
	March 2003	February 2003	January 2003	December 2002
	\$ millions			
322 Paper manufacturing				
Nova Scotia	78	71	66	79
Quebec	976	888	940	932
Ontario	869	791	826	769
Alberta	127	124	124	137
British Columbia	445	387	421	416
323 Printing and related support activities				
Quebec	247	223	223	219
Ontario	489	399	416	438
Manitoba	33	31	30	34
Saskatchewan	11	8	8	9
Alberta	49	43	45	45
British Columbia	46	42	43	43
324 Petroleum and coal products manufacturing				
Quebec	776	751	703	678
Ontario	1,061	910	939	932
Alberta	839	748	714	646
British Columbia	63	63	64	58
325 Chemical manufacturing				
Quebec	747	655	652	690
Ontario	1,906	1,671	1,799	1,645
Manitoba	51	53	61	54
Saskatchewan	77	53	55	23
Alberta	636	572	628	615
British Columbia	103	96	92	89
326 Plastics and rubber products manufacturing				
Nova Scotia	83	82	92	70
Quebec	475	411	405	360
Ontario	1,173	1,080	1,158	963
Manitoba	42	42	40	35
Saskatchewan	10	8	7	6
Alberta	84	72	72	69
British Columbia	83	76	74	72
327 Non-metallic mineral product manufacturing				
Nova Scotia	10	6	9	9
Quebec	182	136	142	144
Ontario	377	327	333	366
Saskatchewan	4	3	3	4
Alberta	106	97	101	103
British Columbia	118	100	97	93
331 Primary metal manufacturing				
Quebec	1,094	1,036	1,088	1,003
Ontario	1,508	1,368	1,510	1,220
Alberta	91	89	96	84
332 Fabricated metal product manufacturing				
Newfoundland and Labrador	8	8	8	7
Prince Edward Island	2	3	1	3
Nova Scotia	18	19	19	23
New Brunswick	22	19	18	19
Quebec	416	369	382	373
Ontario	1,342	1,227	1,255	1,078
Manitoba	73	81	66	63
Saskatchewan	38	30	31	29
Alberta	280	221	238	209
British Columbia	141	130	122	110

Table 10
Shipments by major group and province, unadjusted - continued

Province	Current year			
	March 2003	February 2003	January 2003	December 2002
	\$ millions			
333 Machinery manufacturing				
Quebec	420	347	336	394
Ontario	1,100	952	970	1,002
Manitoba	84	74	74	74
Saskatchewan	65	52	46	47
Alberta	298	217	234	226
British Columbia	143	145	125	157
334 Computer and electronic product manufacturing				
Quebec	532	436	417	572
Ontario	1,031	786	794	969
Saskatchewan	9	7	8	9
Alberta	91	72	88	157
British Columbia	69	58	55	82
335 Electrical equipment, appliance and component manufacturing				
Quebec	254	220	244	218
Ontario	449	389	395	383
Manitoba	13	12	13	15
Saskatchewan	13	9	10	11
Alberta	29	27	27	24
British Columbia	33	30	29	29
336 Transportation equipment manufacturing				
Nova Scotia	69	47	53	44
Quebec	1,145	957	1,169	1,183
Ontario	9,240	8,434	8,571	6,420
Manitoba	169	135	128	131
Saskatchewan	28	25	30	22
Alberta	81	67	72	66
British Columbia	104	89	90	80
337 Furniture and related product manufacturing				
Quebec	293	253	241	227
Ontario	571	534	570	505
Manitoba	63	60	55	55
Saskatchewan	7	6	6	6
Alberta	66	59	67	66
British Columbia	43	44	45	46
339 Miscellaneous manufacturing				
Newfoundland and Labrador	1	1	0	0
Quebec	134	119	110	139
Ontario	222	203	167	178
Manitoba	8	8	7	8
Saskatchewan	4	3	4	4
Alberta	29	28	43	33
British Columbia	49	44	48	57

Table 10
Shipments by major group and province, unadjusted - continued

	Previous year		Year-to-date		Annual	
	March 2002	February 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
Total						
Newfoundland and Labrador	147	141	0.7	422	1.3	2,234
Prince Edward Island	84	79	1.2	251	9.5	1,316
Nova Scotia	644	642	13.3	2,148	1.3	8,646
New Brunswick	935	785	22.8	3,120	3.1	12,632
Quebec	10,196	9,052	2.5	29,222	0.9	122,059
Ontario	23,485	21,655	5.4	69,753	3.4	277,581
Manitoba	932	861	4.3	2,822	0.6	11,538
Saskatchewan	618	559	3.9	1,819	1.3	7,239
Alberta	3,173	2,875	18.4	10,761	-3.4	40,966
British Columbia	2,893	2,545	2.0	8,013	0.4	34,236
311 Food manufacturing						
Newfoundland and Labrador	49	43	-17.6	109	10.3	891
Prince Edward Island	58	57	0.7	180	8.0	952
Nova Scotia	162	166	5.6	510	2.2	2,234
New Brunswick	106	97	0.3	313	4.6	2,004
Quebec	1,113	1,028	3.4	3,268	1.4	13,573
Ontario	2,056	1,875	2.0	5,969	-0.1	25,085
Manitoba	237	226	3.2	735	4.3	3,023
Saskatchewan	132	140	6.2	439	3.3	1,825
Alberta	737	676	7.1	2,276	-1.0	9,055
British Columbia	332	297	7.2	990	3.4	4,270
312 Beverage and tobacco product manufacturing						
Nova Scotia	15	14	16.6	46	1.5	213
Quebec	335	260	1.6	859	5.7	4,093
Ontario	519	425	3.0	1,433	2.6	6,514
Saskatchewan	8	7	-44.9	12	-7.8	92
British Columbia	72	56	12.7	202	9.1	990
313 Textile mills						
Quebec	185	174	-10.8	464	-2.6	2,069
Ontario	78	81	-10.6	207	-5.3	912
314 Textile product mills						
Quebec	85	79	-6.4	221	-2.1	1,020
Ontario	99	89	-4.8	262	3.8	1,138
Alberta	2	2	-2.1	6	-14.4	28
British Columbia	12	11	-31.9	23	4.0	153
315 Clothing manufacturing						
Quebec	342	356	-2.5	942	-7.4	3,937
Ontario	186	168	-9.2	450	6.6	2,020
Manitoba	27	19	16.5	74	13.1	376
Saskatchewan	1	1	23.4	6	-5.6	22
Alberta	6	7	-7.1	20	-6.8	89
British Columbia	20	21	4.7	68	-15.8	263
316 Leather and allied product manufacturing						
Quebec	23	27	-5.7	71	-18.8	430
Ontario	29	15	-37.5	40	11.9	225
321 Wood product manufacturing						
Nova Scotia	45	38	-3.3	115	10.1	530
Quebec	662	571	5.6	1,853	11.9	7,637
Ontario	478	423	-2.7	1,279	7.7	5,622
Manitoba	39	35	-3.0	105	-13.5	501
Saskatchewan	34	24	37.6	115	39.0	430
Alberta	186	166	-1.1	517	2.8	2,265
British Columbia	976	882	-12.8	2,331	4.8	10,830

Table 10

Shipments by major group and province, unadjusted - continued

	Previous year		Year-to-date		Annual	
	March 2002	February 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
322 Paper manufacturing						
Nova Scotia	70	68	3.5	214	-17.9	881
Quebec	971	888	-0.3	2,804	-2.7	11,729
Ontario	817	787	1.2	2,487	-3.6	10,091
Alberta	119	117	-0.1	375	4.0	1,553
British Columbia	417	370	10.3	1,252	-11.7	4,790
323 Printing and related support activities						
Quebec	228	222	5.8	692	-11.3	2,749
Ontario	478	403	0.6	1,304	2.0	5,351
Manitoba	35	36	-10.1	94	-6.4	436
Saskatchewan	10	7	15.6	27	6.1	106
Alberta	50	45	1.7	137	-5.4	574
British Columbia	57	47	-14.0	131	-10.7	608
324 Petroleum and coal products manufacturing						
Quebec	495	411	65.4	2,230	6.7	6,845
Ontario	738	612	45.3	2,910	-2.9	9,861
Alberta	554	452	57.0	2,300	1.0	7,491
British Columbia	64	57	2.9	191	-4.8	754
325 Chemical manufacturing						
Quebec	687	677	0.8	2,054	6.8	8,711
Ontario	1,647	1,448	16.6	5,375	7.8	20,076
Manitoba	38	43	25.1	165	-12.6	616
Saskatchewan	72	47	13.0	185	-10.8	562
Alberta	467	448	34.1	1,836	-6.7	6,456
British Columbia	85	73	26.2	291	7.1	1,076
326 Plastics and rubber products manufacturing						
Nova Scotia	91	85	-3.2	257	6.9	1,141
Quebec	433	382	9.6	1,291	10.7	5,208
Ontario	1,115	1,054	6.4	3,411	6.9	13,805
Manitoba	44	37	5.8	124	7.5	508
Saskatchewan	9	7	7.3	26	5.4	98
Alberta	75	63	10.2	228	-4.0	1,023
British Columbia	79	68	10.0	233	-3.1	1,008
327 Non-metallic mineral product manufacturing						
Nova Scotia	9	7	7.3	25	1.2	162
Quebec	165	135	9.6	461	10.8	2,701
Ontario	346	306	7.1	1,037	4.9	5,264
Saskatchewan	4	4	-11.9	10	-8.2	113
Alberta	83	78	25.4	303	24.1	1,510
British Columbia	92	83	24.7	315	17.0	1,357
331 Primary metal manufacturing						
Quebec	1,086	991	3.2	3,218	7.8	12,712
Ontario	1,289	1,201	17.9	4,386	11.9	16,003
Alberta	69	67	27.5	277	-10.7	896
332 Fabricated metal product manufacturing						
Newfoundland and Labrador	6	4	99.9	25	-15.5	88
Prince Edward Island	1	1	77.5	7	-1.5	25
Nova Scotia	20	17	5.0	57	17.2	264
New Brunswick	22	19	-3.8	59	-5.7	268
Quebec	410	394	-0.2	1,167	1.8	5,329
Ontario	1,362	1,288	-2.4	3,824	4.7	16,165
Manitoba	55	48	49.2	220	-2.0	707
Saskatchewan	31	28	17.3	99	-6.5	416
Alberta	196	198	22.9	738	-2.7	2,637
British Columbia	123	116	10.6	393	2.2	1,609

Table 10

Shipments by major group and province, unadjusted - concluded

	Previous year		Year-to-date		Annual	
	March 2002	February 2002	% Change from 2002	2003	% Change from 2001	2002
	\$ millions					
333 Machinery manufacturing						
Quebec	405	331	-4.1	1,103	0.2	4,587
Ontario	1,117	973	-2.4	3,022	4.1	12,943
Manitoba	93	78	-12.5	231	9.4	1,042
Saskatchewan	68	68	-16.2	163	7.4	662
Alberta	263	241	-3.7	748	-14.5	2,872
British Columbia	129	108	24.6	414	8.7	1,594
334 Computer and electronic product manufacturing						
Quebec	667	495	-14.4	1,385	-18.1	6,588
Ontario	1,199	928	-13.2	2,611	-13.9	11,900
Saskatchewan	8	6	13.3	24	12.7	94
Alberta	118	84	-14.9	251	-29.9	1,392
British Columbia	77	55	-4.7	182	-17.7	879
335 Electrical equipment, appliance and component manufacturing						
Quebec	247	222	3.6	717	10.6	2,930
Ontario	465	427	-7.1	1,234	-12.2	5,210
Manitoba	18	12	-11.1	37	-14.7	183
Saskatchewan	21	20	-49.9	32	-45.0	208
Alberta	23	25	13.3	83	9.5	328
British Columbia	31	27	8.4	92	-32.9	345
336 Transportation equipment manufacturing						
Nova Scotia	63	106	-27.5	168	29.7	862
Quebec	1,245	1,019	-9.5	3,271	-7.0	14,134
Ontario	8,711	8,465	5.9	26,245	6.5	100,483
Manitoba	132	132	3.8	432	0.2	1,603
Saskatchewan	26	28	1.0	82	21.7	349
Alberta	70	64	8.6	220	0.5	785
British Columbia	115	103	-6.2	282	-4.9	1,283
337 Furniture and related product manufacturing						
Quebec	280	269	1.6	787	11.4	3,293
Ontario	583	509	3.8	1,675	-2.2	6,629
Manitoba	62	60	-1.9	178	11.3	743
Saskatchewan	7	7	-3.9	20	3.3	89
Alberta	69	64	-4.4	192	-3.9	838
British Columbia	40	42	10.2	132	14.4	525
339 Miscellaneous manufacturing						
Newfoundland and Labrador	2	1	-45.9	2	22.1	18
Quebec	133	122	0.3	363	11.3	1,785
Ontario	173	178	11.0	592	6.8	2,284
Manitoba	11	9	-13.2	23	-11.0	107
Saskatchewan	3	3	11.6	11	-2.0	44
Alberta	30	30	3.3	100	7.8	440
British Columbia	47	44	10.1	142	15.0	606

Survey documentation

- About the Monthly Survey of Manufacturing
- Concepts and definitions
- Survey Design and Methodology
- Data Quality

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), 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 Clothing (NAICS 315), Wood Products (321), Non-Metallic Mineral Products (327), Primary Metals (331), Fabricated Metal Products (332), Machinery (333), Computer and Electronic Products (334), Electrical Equipment, Appliance and Components (335), Transportation Equipment (336), Furniture and Related Products (337) and Miscellaneous Manufacturing (339).

Survey Design and Methodology

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

Concept Review

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

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

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

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

Methodology

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

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

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

Components of the Redesigned Survey

Target Population and Sampling Frame

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

The Sample

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

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

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

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

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

Data Collection

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

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

Data Quality

Statistical Edit and Imputation

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

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

Revisions

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

Estimation

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

Benchmarking

The MSM is periodically benchmarked to the most recent results of the Annual Survey of Manufactures (approximately eighteen months after the end of the reference year). Benchmarking is a process designed to calibrate the monthly estimates to the level of the more complete Annual Survey of Manufacturers. The result is that the two surveys have consistent totals at the aggregated level. The MSM estimates were benchmarked to the 1998 ASM with the release of the January 2001 reference month.

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 non-sampling 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 table below 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*.

National Level CVs by Characteristic

Month	Shipments	Raw Material Inventories	Goods in Process Inventories	Finished Product Inventories	Unfilled Orders
	%				
March 2002	0.63	1.30	0.79	1.50	1.50
April 2002	0.61	1.34	0.81	1.52	1.39
May 2002	0.63	1.38	0.75	1.44	1.37
June 2002	0.64	1.41	0.73	1.51	1.37
July 2002	0.54	0.88	0.62	1.34	1.37
August 2002	0.53	0.88	0.65	1.36	1.42
September 2002	0.53	0.90	0.73	1.40	1.52
October 2002	0.53	0.93	0.72	1.33	1.86
November 2002	0.50	0.91	0.72	1.25	1.85
December 2002	0.54	0.92	0.74	1.20	1.82
January 2003	0.52	0.89	0.75	1.24	1.80
February 2003	0.51	0.88	0.73	1.24	1.77
March 2003	0.52	0.91	0.76	1.26	1.75

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 non-response 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 table below 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.

Average National Weighted Rates by Characteristic

Characteristic	Response	Imputation	Editing
		%	
Shipments	93.21	4.81	1.99
Raw Materials	79.58	17.58	2.85
Goods in Process	84.75	10.83	4.42
Finished Products	80.98	14.54	4.48
Unfilled Orders	88.85	5.61	5.54

Joint Interpretation of Measures of Error

The measure of non-response error as well as the coefficient of variation must be considered jointly to have an overview of the quality of the estimates. The lower the coefficient of variation and the higher the weighted response rate, the better will be the published estimate.

Seasonal Adjustment

Economic time series contain the elements essential to the description, explanation and forecasting of the behavior of an economic phenomenon. They are statistical records of

the evolution of economic processes through time. In using time series to observe economic activity, economists and statisticians have identified four characteristic behavioral components: the long-term movement or trend, the cycle, the seasonal variations and the irregular fluctuations. These movements are caused by various economic, climatic or institutional factors. The seasonal variations occur periodically on a more or less regular basis over the course of a year. These variations occur as a result of seasonal changes in weather, statutory holidays and other events that occur at fairly regular intervals and thus have a significant impact on the rate of economic activity.

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

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

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

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

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

Trend

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