

Embargoed until 10:45am – 15 September 2009

## Economic Survey of Manufacturing: June 2009 quarter

### Highlights

Seasonally adjusted sales for the June 2009 quarter compared with the March 2009 quarter:

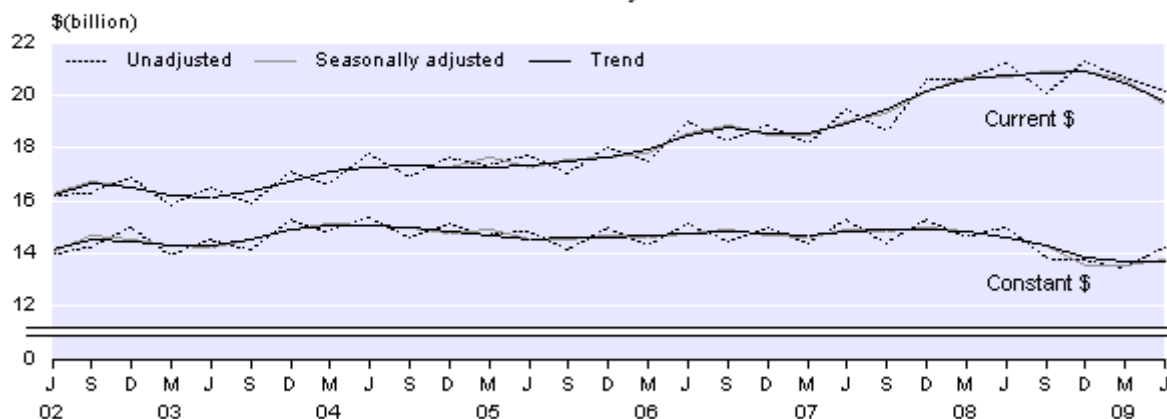
#### Volumes

- Manufacturing rose 1.8 percent.
- Excluding meat and dairy product manufacturing, sales fell 2.8 percent.
- Meat and dairy manufacturing rose 7.4 percent.

#### Values

- Manufacturing fell 4.8 percent.
- Excluding meat and dairy product manufacturing, sales fell 3.7 percent.
- Meat and dairy manufacturing fell 8.9 percent.

**Total Manufacturing Sales**  
Current and constant dollars <sup>(1)</sup>  
Quarterly



(1) Constant dollar series (volumes) are at December 1997 quarter prices.

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Government Statistician

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## Commentary

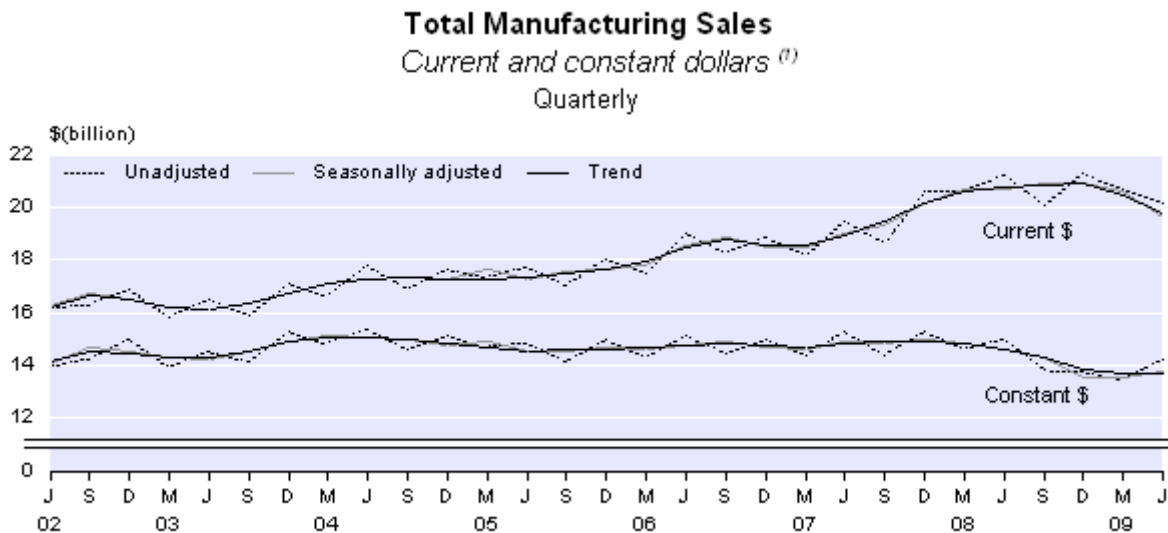
All references to sales movements are seasonally adjusted unless otherwise stated.

### All manufacturing industries

The volume of manufacturing sales rose 1.8 percent in the June 2009 quarter. This follows a flat March 2009 quarter and falls totalling 9.3 percent during 2008. The main contributor to the latest rise was the meat and dairy product manufacturing industry, which rose 7.4 percent in sales volume.

Six other manufacturing industries also showed rises in sales volume for the June 2009 quarter. Paper and paper products (up 8.8 percent), and other food (up 3.3 percent) were the main contributors. Eight of the 15 industries showed offsetting falls in sales volume, with the largest being for machinery and equipment (down 7.3 percent) and non-metallic mineral products (down 9.1 percent).

Volumes are calculated by removing the effect of price changes from values.



(1) Constant dollar series (volumes) are at December 1997 quarter prices.

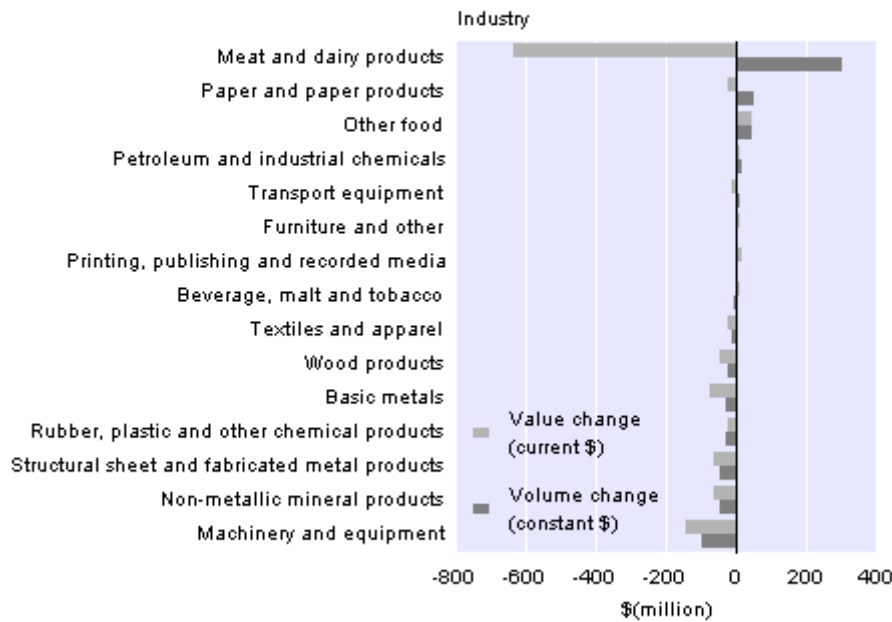
Although the volume of sales rose in the June 2009 quarter, the value fell by 4.8 percent (\$986 million), dropping to the same level as in late 2007. Lower prices for meat and dairy products, resulting in a \$633 million drop in the value of meat and dairy product manufacturing, were the main cause of this fall.

By industry, the main sales value decreases for the June 2009 quarter were for meat and dairy product manufacturing (down 8.9 percent or \$633 million), machinery and equipment manufacturing (down 8.0 percent or \$144 million), and basic metal manufacturing, which is not seasonally adjusted (down 10.9 percent or \$72 million). The largest increases, which were small in comparison, were for other food manufacturing (up 2.1 percent or \$45 million) and printing, publishing and recorded media manufacturing (up 2.4 percent or \$20 million).

## Changes in Seasonally Adjusted Manufacturing Sales

Current and constant dollars <sup>(1)</sup>

March 2009 quarter to June 2009 quarter



(1) Constant dollar series (volumes) are at December 1997 quarter prices.

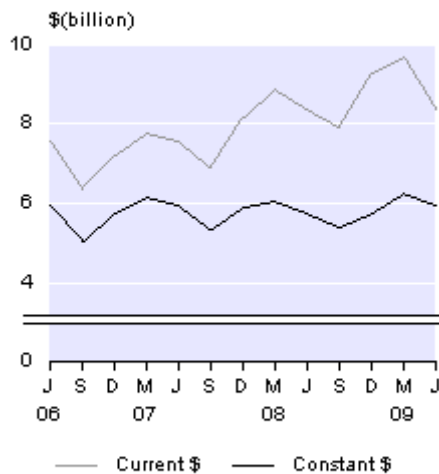
The trend for the sales volume is flat for the June 2009 quarter, after five quarters of decline. The trend for the sales value shows downward movements for the latest two quarters.

Stocks of finished goods, which are not seasonally adjusted, were up 3.3 percent in volume for the June 2009 quarter compared with the June 2008 quarter. Stock values, at \$8.4 billion, were up 0.3 percent (\$25 million) from the June 2008 quarter.

## Total Manufacturing Stocks <sup>(1)</sup>

Current and constant dollars <sup>(2)</sup>

Quarterly

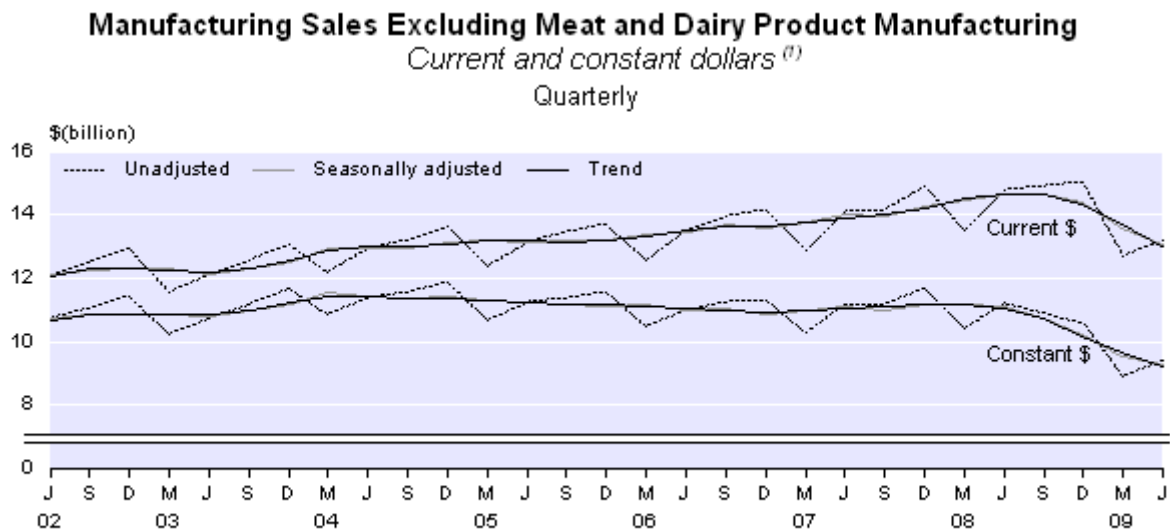


(1) Closing stocks of finished goods.

(2) Constant dollar series (volumes) are at December 1997 quarter prices.

## All manufacturing excluding meat and dairy product manufacturing

The volume of sales, excluding meat and dairy product manufacturing, fell 2.8 percent in the June 2009 quarter, following record falls in the previous two quarters. The volume fell 16.4 percent in the last four quarters. Three manufacturing industries contributed most to the June 2009 quarter fall: machinery and equipment, non-metallic mineral products, and structural, sheet and fabricated metal products. The main rises were for paper and paper products, and other food.



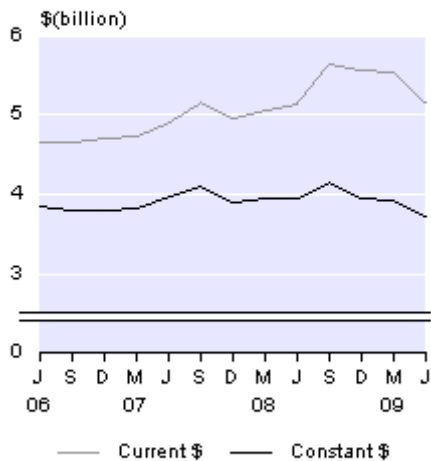
(1) Constant dollar series (volumes) are at December 1997 quarter prices.

The value of sales fell 3.7 percent (\$508 million) in the June 2009 quarter. This follows a fall of 5.6 percent (\$811 million) in the March 2009 quarter. Machinery and equipment (down \$144 million) and basic metals (down \$72 million) had the largest falls in sales value in the June 2009 quarter, while other food (up \$45 million) had the largest rise.

The trend for the sales volume shows a decline of 17.7 percent for the latest five quarters, while the trend for the sales value is down 11.2 percent for the latest three quarters.

The volume of finished goods stocks, which is not seasonally adjusted, was down 5.7 percent for the June 2009 quarter compared with the June 2008 quarter. The value, at \$5.2 billion, was up 0.5 percent.

**Manufacturing Stocks<sup>(1)</sup>**  
**Excluding Meat and Dairy**  
*Current and constant dollars<sup>(2)</sup>*  
 Quarterly

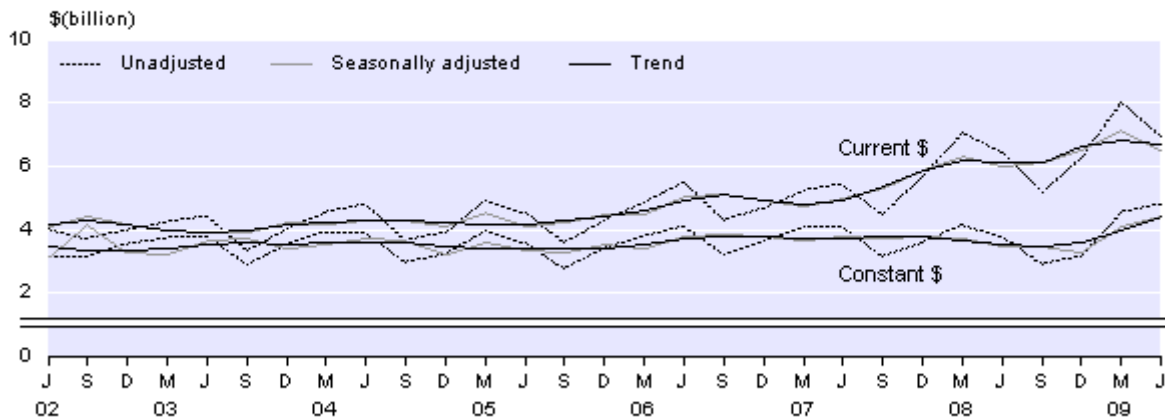


(1) Closing stocks of finished goods.  
 (2) Constant dollar series (volumes) are at December 1997 quarter prices.

**Meat and dairy product manufacturing**

The volume of sales for the meat and dairy product manufacturing industry rose 7.4 percent in the June 2009 quarter, following a rise of 23.5 percent in the March 2009 quarter. These rises were mainly due to increased dairy exports. Dairy export volumes showed rises of 15.7 percent and 23.7 percent for the March and June 2009 quarters, respectively, as measured by the Overseas Trade Indexes, while meat export volumes showed a fall of 0.4 percent and a rise of 3.5 percent for the same quarters.

**Meat and Dairy Product Manufacturing Sales**  
*Current and constant dollars<sup>(1)</sup>*  
 Quarterly



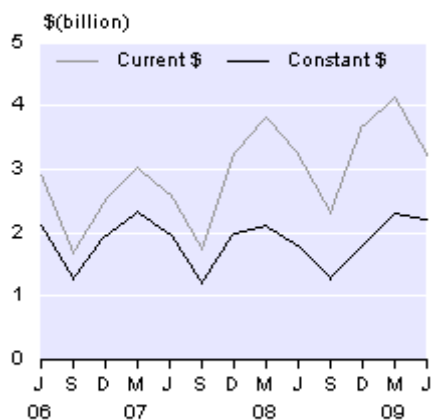
(1) Constant dollar series (volumes) are at December 1997 quarter prices.

The value of sales fell 8.9 percent in the June 2009 quarter, following a rise of 9.5 percent in the March 2009 quarter. The substantial rises in export volumes, mainly for dairy products, were negated by price falls. Prices for dairy products, as measured by the Producers Price Index, fell 19.9 percent in the June 2009 quarter, while prices for meat and meat products fell 3.7 percent.

The trend for the sales volume shows strong growth in recent quarters. However, the trend for the sales value, which incorporates the impact of price falls, provisionally indicates a decline in the latest quarter.

The volume of finished goods stocks, which is not seasonally adjusted, was up 23.1 percent for the June 2009 quarter compared with the June 2008 quarter. However, the value, at \$3.2 billion, is unchanged. The increase in volume was nullified by price decreases.

**Meat and Dairy Product Manufacturing Stocks<sup>(1)</sup>**  
*Current and constant dollars<sup>(2)</sup>*  
 Quarterly



(1) Closing stocks of finished goods.

(2) Constant dollar series (volumes) are at December 1997 quarter prices.

Note: Most dairy industry values in this survey are compiled on a non-standard quarter. There is a one-month lag in the data which means, for example, that the June quarter includes values for the months of March, April, and May. Monthly data is now available and once there is a substantial time series and a new seasonal pattern can be established, the dairy industry (combined with the meat industry) will be published on a standard quarter.

## Machinery and equipment manufacturing

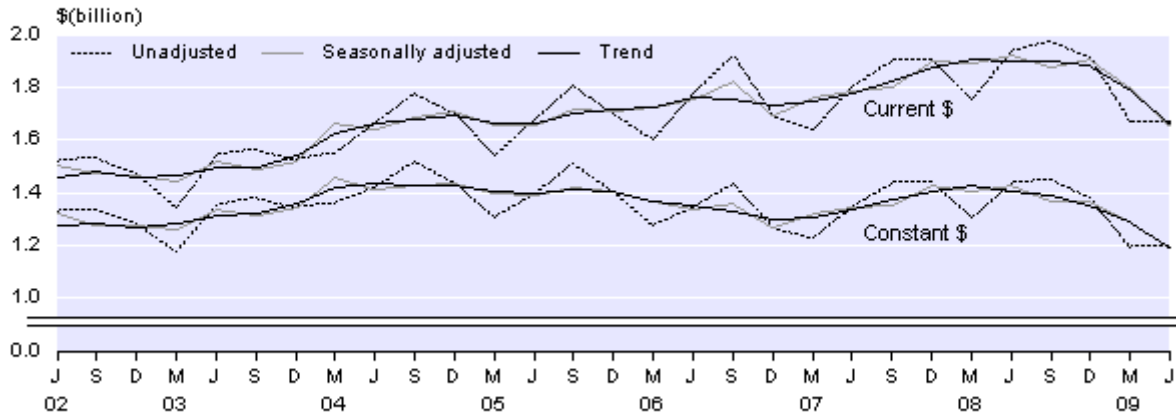
This industry includes the manufacture of industrial electronic equipment and appliances, and photographic and scientific equipment.

The volume of sales for this industry fell 7.3 percent in the June 2009 quarter, following a fall of 6.1 percent in the March 2009 quarter. The series is at its lowest level in 10 years.

## Machinery and Equipment Manufacturing Sales

Current and constant dollars<sup>(1)</sup>

Quarterly



(1) Constant dollar series (volumes) are at December 1997 quarter prices.

The value of sales fell 8.0 percent in the June 2009 quarter, following a fall of 5.6 percent in the March 2009 quarter. Prices for machinery and equipment rose 0.5 percent in the March 2009 quarter and fell 1.5 percent in the June 2009 quarter, as measured by the Producers Price Index.

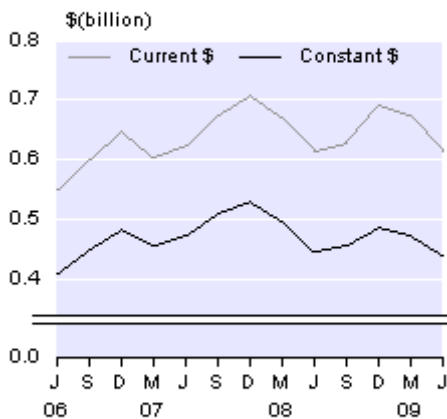
The trend for the sales volume shows a decline for the latest five quarters, while the trend for the sales value shows a decline for the latest three quarters. Both trend series show an accelerating rate of decline.

The volume of finished goods stocks, which is not seasonally adjusted, is down 1.9 percent for the June 2009 quarter compared with the June 2008 quarter. The value, at \$612 million, is flat.

## Machinery and Equipment Manufacturing Stocks<sup>(1)</sup>

Current and constant dollars<sup>(2)</sup>

Quarterly



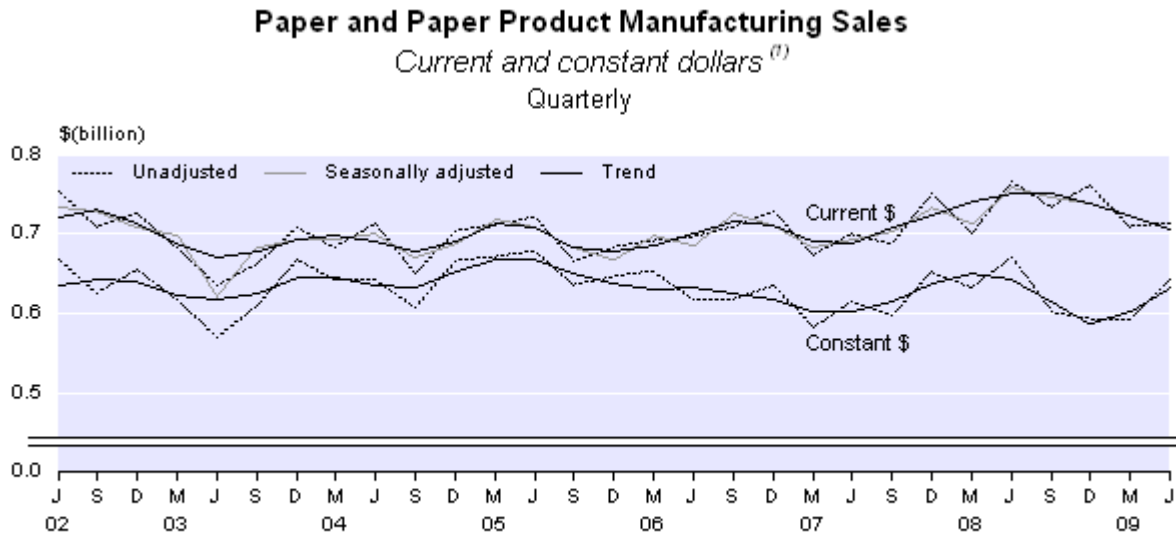
(1) Closing stocks of finished goods.

(2) Constant dollar series (volumes) are at December 1997 quarter prices.

## Paper and paper product manufacturing

The paper and paper product manufacturing industry includes the manufacture of pulp, paper and paperboard, solid and corrugated paperboard containers, and paper bag and sack products. The volume of sales for this industry does not have a stable seasonal pattern, so is not seasonally adjusted.

The (unadjusted) volume of sales rose 8.8 percent in the June 2009 quarter, following a fall of 0.7 percent in the March 2009 quarter.



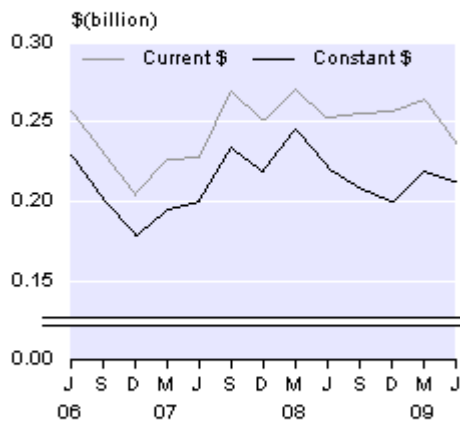
(1) Constant dollar series (volumes) are at December 1997 quarter prices.

The value of sales fell 2.6 percent in the June 2009 quarter, following a cumulative fall of 4.6 percent in the previous three quarters. Prices for paper and paper products declined 5.8 percent in the March 2009 quarter and 7.4 percent in the June 2009 quarter, as measured by the Producers Price Index, following three quarters of price increases. These periods of price increase and decrease have caused the recent divergence and convergence between the current price and constant price series in the preceding graph.

The trend for the sales volume indicates strong recent growth, while the trend for the sales value shows a decline for the latest three quarters.

The volume of finished goods stocks, which is not seasonally adjusted, was down 4.1 percent for the June 2009 quarter compared with the June 2008 quarter. The value, at \$236 million, was down 6.9 percent.

**Paper and Paper Product Manufacturing Stocks<sup>(1)</sup>**  
*Current and constant dollars<sup>(2)</sup>*  
 Quarterly



(1) Closing stocks of finished goods.

(2) Constant dollar series (volumes) are at December 1997 quarter prices.

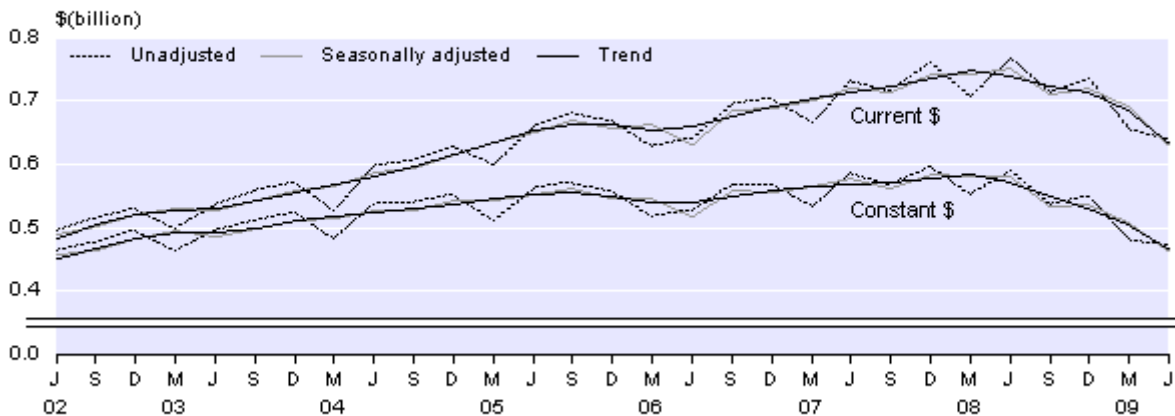
**Non-metallic mineral product manufacturing**

The non-metallic mineral product manufacturing industry includes the manufacture of glass and glass products, ceramics, cement, lime, plaster, and concrete products.

The volume of sales fell 9.1 percent in the June 2009 quarter, following a fall of 4.7 percent in the March 2009 quarter. The series is at its lowest level in seven years.

The value of sales fell 8.9 percent in the June 2009 quarter, following a fall of 3.8 percent in the March 2009 quarter. Prices for non-metallic mineral products changed little in these quarters, up 1.0 percent and 0.1 percent in the March and June 2009 quarters, respectively, as measured by the Producers Price Index.

**Non-metallic Mineral Product Manufacturing Sales**  
*Current and constant dollars<sup>(1)</sup>*  
 Quarterly



(1) Constant dollar series (volumes) are at December 1997 quarter prices.

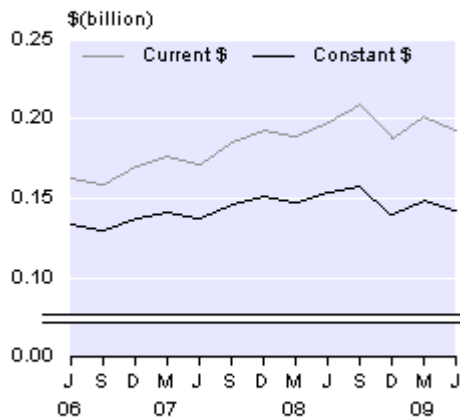
The trend series for both the sales volume and sales value show a marked decline for the latest five quarters.

The volume of finished goods stocks, which is not seasonally adjusted, was down 7.5 percent for the June 2009 quarter compared with the June 2008 quarter. The value, at \$193 million, was down 2.9 percent.

**Non-metallic Mineral Product  
Manufacturing Stocks<sup>(1)</sup>**

*Current and constant dollars<sup>(2)</sup>*

Quarterly



(1) Closing stocks of finished goods.

(2) Constant dollar series (volumes) are at December 1997 quarter prices.

## Revisions

Amended data received from respondents has resulted in revisions for the following industries:

- meat and dairy product manufacturing (March 2009 quarter)
- other food manufacturing (December 2008 and March 2009 quarters)
- beverage, malt and tobacco manufacturing (March 2009 quarter)
- petroleum and industrial chemical manufacturing (March 2009 quarter)
- transport equipment manufacturing (March 2009 quarter)
- machinery and equipment manufacturing (June 2008 quarter)
- furniture and other manufacturing (June 2008 to March 2009 quarters).

The main changes are in the following table.

Industry	Variable	Series MANQ.	Period (quarter)	Published 15 Jun 2009	Published 15 Sep 2009
				\$(million)	
Other food	Sales	SNMC03A	Dec 2008	2,314	2,325
other food	Sales	SNMC03A	Mar 2009	2,067	2,056
Beverage, malt	Sales	SNMCZ2A	Mar 2009	917	927
Petroleum etc	Stocks	SNMC10E	Mar 2009	443	424
All Manufacturing	Sales	SNMCZZA	Sep 2005	17,060	17,049
All Manufacturing	Sales	SNMCZZA	Dec 2008	21,304	21,314
All Manufacturing	Stocks	SNMCZZE	Mar 2009	9,689	9,671

## Measurement errors

The Economic Survey of Manufacturing applies imputation methods for estimating values for small firms and non-response, and, like all statistical surveys, is subject to measurement errors, including sample errors and non-sample errors. These measurement errors affect the accuracy of the published statistics. For more information on measurement errors, please refer to the technical notes of this release.

## Sample errors

The postal survey was designed to give statistics at the following levels of accuracy (at the 95 percent confidence interval limit):

- 5 percent for sales, salaries and wages, and value added at the total manufacturing level
- 10 percent for sales, salaries and wages, and value added at the published industry level, where value added is calculated as follows:

value added = sales – purchases + stock change

This means, for example, that there is a 95 percent chance that the true value of total manufacturing sales lies within 5 percent of the published estimate.

Sample errors are calculated each quarter for absolute values and for changes in value from the previous quarter.

The sample errors for the June 2009 quarter, at the 95 percent confidence interval limit, are:

<b>Industry</b>	<b>Sample error for sales</b>	<b>Sample error for change in sales</b>
	Percent	
Meat and dairy product manufacturing	0.0	0.0
Other food manufacturing	12.0	8.1
Beverage, malt and tobacco manufacturing	0.0	0.0
Textile and apparel manufacturing	6.9	4.3
Wood product manufacturing	5.3	2.0
Paper and paper product manufacturing	0.0	0.0
Printing, publishing and recorded media	8.5	5.9
Petroleum and industrial chemical manufacturing	0.0	0.0
Rubber, plastic and other chemical product manufacturing	10.6	2.0
Non-metallic mineral product manufacturing	4.5	2.6
Basic metal manufacturing	0.0	0.0
Structural, sheet and fabricated metal product manufacturing	5.0	4.1
Transport equipment manufacturing	5.3	2.9
Machinery and equipment manufacturing	4.6	2.8
Furniture and other manufacturing	8.2	7.3
<b>Total manufacturing</b>	<b>1.6</b>	<b>0.9</b>

Industries with zero sample error are full-coverage industries. In these industries all large firms are surveyed and all small- to medium-sized firms are modelled using administrative data from Inland Revenue.

## **Imputation**

### ***Small firms***

Small- to medium-sized firms are generally not surveyed. Their variables are instead modelled from administrative data from Inland Revenue. Ratios calculated from the

postal sample responses are applied to the administrative data to provide estimated values.

### ***Non-response imputation***

Although attempts are made to achieve a 100 percent response rate, in practice this does not occur. Values for non-responding businesses are estimated using a range of methods, including:

- regression imputation
- historic imputation
- mean imputation.

Regression imputation involves estimating the variable of interest from the unit's administrative data (GST sales), based on the relationship shown by similar businesses. Historic imputation involves multiplying their response in the previous period by a non-response factor. The non-response factor is the average movement over the quarter of similar businesses. Mean imputation involves estimating a value for a unit by using the average value for a set of similar businesses.

The table below shows percentages of sales imputed in the June 2009 quarter:

<b>Industry</b>	<b>Non-response</b>	<b>Tax modelled</b>
	Percentage of sales	
Meat and dairy product manufacturing	0.3	2.4
Other food manufacturing	7.8	5.0
Beverage, malt and tobacco manufacturing	10.8	6.7
Textile and apparel manufacturing	19.3	16.1
Wood product manufacturing	11.5	9.6
Paper and paper product manufacturing	8.1	0.6
Printing, publishing and recorded media	12.4	9.8
Petroleum and industrial chemical manufacturing	3.1	5.0
Rubber, plastic and other chemical product manufacturing	10.2	6.8
Non-metallic mineral product manufacturing	9.6	7.8
Basic metal manufacturing	4.0	5.9
Structural, sheet and fabricated metal product manufacturing	20.3	10.7
Transport equipment manufacturing	19.3	10.8
Machinery and equipment manufacturing	16.7	12.1
Furniture and other manufacturing	19.4	21.4
<b>Total manufacturing</b>	<b>8.0</b>	<b>6.4</b>

## **Response rate**

The response rate applies to the postal sample and gives the proportion of sales obtained from survey responses (compared with being imputed). The Economic Survey of Manufacturing has a target response rate of 85 percent. The response rate achieved for the June 2009 quarter was 91 percent.

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## **Next release ...**

*Economic Survey of Manufacturing: September 2009* will be released on 15 December 2009

## Technical notes

### Background to the survey

The Economic Survey of Manufacturing (QMS) is designed to provide short-term economic indicators for the manufacturing sector. In addition, the data is used to compile the manufacturing sector component of quarterly national accounts. The survey was last redesigned in the June 2001 quarter.

### Population

The target population for this survey is all kind-of-activity units (KAUs) operating in New Zealand that are classified as Manufacturing (Australian and New Zealand Standard Industrial Classification Division C) on Statistics New Zealand's Business Frame.

### Sample design

The survey population is stratified according to:

- industries defined by the ANZSIC-based ANZIND classification at the working industry level
- size (in terms of rolling mean employment)
- turnover (annualised GST sales).

Each ANZIND working industry division contains between two and four substrata. Because of the contribution large units make to the economic activity within each industry group, they are all included in the sample. A portion of the remaining medium to large units is also included in the sample. In addition, small- to medium-sized businesses have their data modelled from administrative data (GST and Employee Monthly Survey (EMS)) sourced from Inland Revenue. All manufacturing KAUs belonging to a selected 'enterprise' are included.

About 1,600 units have been selected in the postal sample from the entire population, and approximately 17,000 units have their data modelled from tax data.

### Sample maintenance

Sample maintenance is the process that maintains the sample over time, to reflect births, deaths and other structural changes identified on the Business Frame. The information for Business Frame changes comes from a variety of sources, including GST registrations and respondent contact.

New enterprises are identified when they register for GST. Once a quarter, the new enterprises are selected into the sample using the same criteria as for the original sample. These are referred to as births. When an enterprise ceases trading, its manufacturing KAUs are removed from the survey. These are referred to as deaths.

Enterprises can also enter or leave the survey sample if they are reclassified from another industry to manufacturing. Reclassifications occur when an enterprise changes

its main form of activity (eg from wholesale trade to manufacturing). These are usually identified in the Annual Frame Update Survey (AFUS) conducted in February each year.

## **Sample reselection**

The sample for the QMS is reselected each quarter to ensure the sample reflects changes occurring in the manufacturing population.

## **Industry classifications**

From the September 2001 quarter, QMS estimates have been published using industries defined by the ANZSIC-based ANZIND classification. The ANZSIC series are the official QMS statistics.

The introduction of ANZSIC ensures the industry classification used by Statistics NZ better reflects contemporary economic activity. It also improves the comparability of statistics produced in New Zealand and Australia.

## **Measurement errors**

Errors in the survey are divided into two classes:

### **Non-sampling error**

Non-sampling error includes errors arising from biases in the patterns of response and non-response, inaccuracies in reporting by respondents, and errors in the recording and coding of data. The size of these errors is difficult to quantify. Data is subject to revision if significant errors are detected in subsequent quarters.

### **Sampling error**

Sampling error is a measure of the variability that occurs by chance because a sample, rather than an entire population, is surveyed.

## **Definitions**

### **ANZSIC**

Australian and New Zealand Standard Industrial Classification system.

### **ANZIND**

An ANZSIC-based classification used to group industries for publication.

### **Business Frame**

A register of all economically significant businesses operating in New Zealand. The population of the QMS is drawn from the Business Frame.

## **Enterprise**

A business entity operating in New Zealand either as a legally constituted body such as a company, partnership, trust, local or central government trading organisation, or as a self-employed individual.

## **Kind-of-activity unit (KAU)**

A subdivision of an enterprise engaged in predominantly one activity and for which a single set of accounting records is available.

## **Rolling Mean Employment (RME)**

RME is a 12-month moving average of the monthly employee count (EC) figure which replaces the numbers of full-time and part-time employees.

## **Operating income**

Income from total sales. This includes:

- sales of processed goods
- sales of goods purchased for resale
- sales of services
- repair services
- manufacturing and processing fees
- management fees
- rental income
- leasing income
- royalties
- patent fees.

Operating income may contain end-of-year payouts that relate to production from earlier quarters. Operating income excludes:

- donations
- insurance claims
- subsidies/government grants
- exchange rate gains
- extraordinary items
- gains on sales of fixed assets
- excise duties
- bad debts.

## **Purchases and operating expenditure**

This includes:

- purchases of goods for resale
- purchases of goods and materials for production

- motor vehicle expenses
- electricity and fuels
- management fees
- telecommunication expenses
- charges and fees paid to other businesses/divisions
- general operating expenditure (eg freight, rent)
- royalties
- patent fees.

Purchases and operating expenditure may incorporate payments for materials or services that may relate to quarters other than those in which they are recorded.

Purchases and operating expenditure excludes:

- interest/dividend payments
- sales tax
- excise duties
- fringe benefit tax
- donations
- bad debts
- extraordinary items
- exchange rate losses
- losses on sales of fixed assets
- depreciation.

### **Salaries and wages**

Gross salaries and wages paid to employees during the quarter, excluding salaries and wages to working proprietors and drawings.

### **Stocks of raw materials**

Closing stocks of raw materials for use in production.

### **Stocks of finished goods**

Closing stocks of finished goods, work in progress and trading stocks.

### **Additions to fixed assets**

This includes purchases of land, and other fixed assets and capital works by own employees. It excludes any revaluation of fixed assets.

### **Disposals of fixed assets**

This includes sales of land or other fixed assets (reported at sale price). It excludes any devaluation of fixed assets.

## **Use of manufacturing data in quarterly national accounts**

A key use of the QMS is in the calculation of manufacturing value added for the compilation of quarterly Gross Domestic Product (GDP).

Base year manufacturing value added is extrapolated using volume indexes. For each ANZSIC division, volume indexes are calculated from deflated sales and the deflated finished goods stock change. Sub-indexes from the Producers Price Index (PPI) are used for deflating QMS sales and finished goods stocks.

QMS data is supplemented with production data for the following industries:

- Meat and dairy product
- Petroleum and industrial chemical
- Basic metal.

## **Seasonally adjusted series**

The X-12-ARIMA package has been used to produce the seasonally adjusted estimates and trend estimates for sales in all subdivisions. Seasonal adjustment aims to eliminate the impact of regular seasonal events (such as annual cycles in agricultural production, winter or annual holidays) on time series. This makes the data for adjacent quarters more comparable.

All seasonally adjusted figures are subject to revision each quarter. This enables the seasonal component to be better estimated and removed from the series.

The X-12-ARIMA seasonal adjustment package is a very robust procedure; however, it has problems when there has been an abrupt change in the seasonal variation, as do other seasonal adjustment packages.

As a result of the restructuring within the dairy industry, there has been a discontinuity in the meat and dairy product and total manufacturing series. The seasonal pattern of the dairy series may have become less closely tied to production cycles due to the removal of the monopsony in the industry. Should this occur, it is likely that the seasonality of the total sales series will also change, as it has been strongly influenced by the seasonality of the meat and dairy series. Therefore, a seasonal movement of a given magnitude in the meat and dairy product and total manufacturing series before June 2002 may not have the same meaning as a seasonal movement of a similar magnitude after June 2002.

Since September 2002 the dairy series have been adjusted to take some account of this expected change in behaviour. There may be further revisions to the meat and dairy, and the total manufacturing series, as further information becomes available which enables Statistics NZ to better quantify the effect of the changes in the dairy industry.

Due to the changes in the meat and dairy series, it has been decided to change the seasonal adjustment method for total sales from direct to indirect. This will allow the series to better respond to changes in the seasonality of the components, and was considered preferable to our usual selection criteria. More information on direct and

indirect adjustment is available on our website [www.stats.govt.nz](http://www.stats.govt.nz) in the [seasonal adjustment FAQ pages](#).

For further information contact [seasonaladjustment@stats.govt.nz](mailto:seasonaladjustment@stats.govt.nz).

The trend series are calculated using the X-12-ARIMA seasonal adjustment package. They are based on a five- or seven-term moving average of the seasonally adjusted series, with an adjustment for outlying values.

Trend estimates towards the end of the series incorporate new data as they become available and can therefore change as more observations are added to the series. Revisions can be particularly large if an observation is treated as an outlier in one quarter, but is found to be part of the underlying trend as further observations are added to the series. Typically, only the estimates for the most recent quarter will be subject to substantial revisions.

## **Volume series**

These are value series that have been adjusted by a price index to remove the effect of price changes. They can then be used for measuring quantity change. The volume series, at present, are expressed in December 1997 quarter dollars.

Values are adjusted using sub-indexes from the PPI. These sub-indexes measure price movements in each of the 15 published manufacturing industries, as well as total manufacturing. When the value series are divided by the respective sub-indexes, price effects are removed and a volume measure remains. The PPI sub-indexes are available on Infoshare.

## **More information**

For more information, follow the [link](#) from the technical notes of this release on the Statistics NZ website.

## **Estimated trend**

For any series, the survey estimates can be broken down into three components: trend, seasonal and irregular. While seasonally adjusted series have had the seasonal component removed, trend series have had both the seasonal and irregular components removed. Trend estimates reveal the underlying direction of movement in a series, and are likely to indicate turning points more accurately than are seasonally adjusted estimates.

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## Tables

The following tables are printed with this Hot Off The Press and can also be downloaded from the Statistics New Zealand website in Excel format. If you do not have access to Excel, you may use the [Excel file viewer](#) to view, print and export the contents of the file.

### List of tables

1. All manufacturing, ANZSIC division C
2. All manufacturing excluding meat and dairy product manufacturing, ANZSIC division C (excluding ANZSIC C211–C212)
3. Meat and dairy product manufacturing, ANZSIC C211–C212
4. Other food manufacturing, ANZSIC C213–C217
5. Beverage, malt and tobacco manufacturing, ANZSIC C218–C219
6. Textile and apparel manufacturing, ANZSIC C22
7. Wood product manufacturing, ANZSIC C231–C232
8. Paper and paper product manufacturing, ANZSIC C233
9. Printing, publishing, and recorded media manufacturing, ANZSIC C24
10. Petroleum and industrial chemical manufacturing, ANZSIC C251–C253
11. Rubber, plastic and other chemical product manufacturing, ANZSIC C254–C256
12. Non-metallic mineral product manufacturing, ANZSIC C26
13. Basic metal manufacturing, ANZSIC C271–C273
14. Structural, sheet and fabricated metal product manufacturing, ANZSIC C274–C276
15. Transport equipment manufacturing, ANZSIC C281–C282
16. Machinery and equipment manufacturing, ANZSIC C283–C286
17. Furniture and other manufacturing, ANZSIC C29
18. Sales – unadjusted, at December 1997 quarter prices
19. Sales – seasonally adjusted, at December 1997 quarter prices
20. Closing stocks of finished goods, at December 1997 quarter prices

Statistics for the Economic Survey of Manufacturing are also available from our online database [Infoshare](#).