

# Gross Domestic Product: September 2011 quarter

Embargoed until 10:45am – 22 December 2011

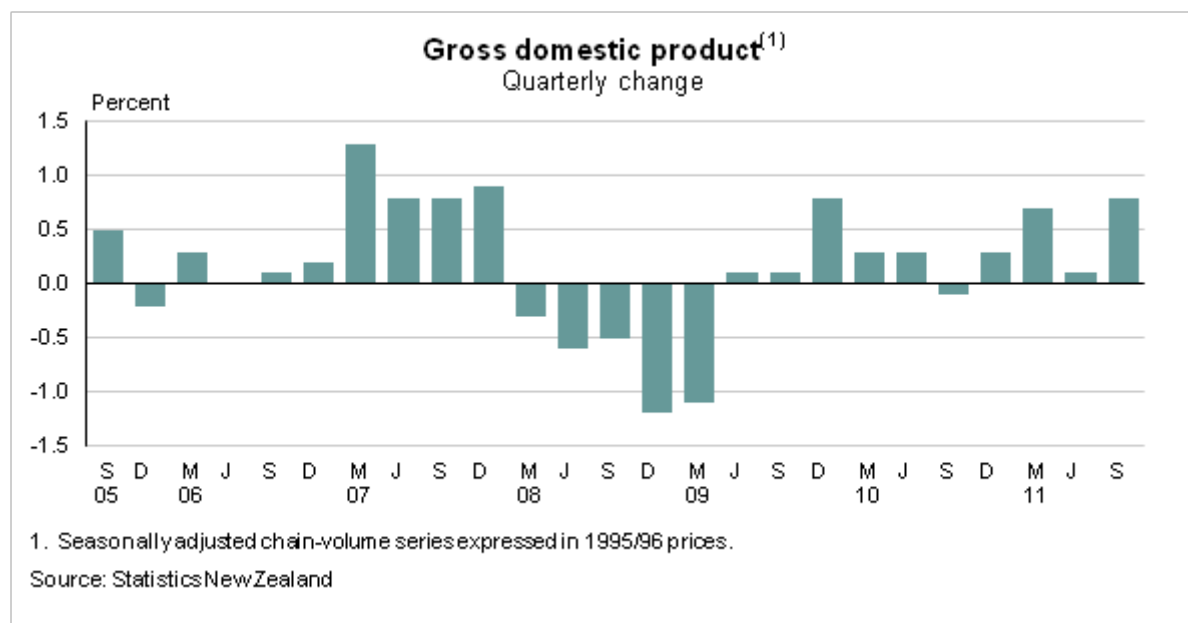
## Key facts

Gross domestic product (GDP):

- Economic activity increased 0.8 percent in the September 2011 quarter.
- Manufacturing (up 2.3 percent) was the largest contributor to this quarters' increase.
- Retail, accommodation, and restaurants (up 2.5 percent) and finance, insurance, and business services (up 0.6 percent) were also up this quarter.
- GDP was up 1.3 percent for the year ended September 2011.

For the expenditure measure of GDP:

- The expenditure measure of GDP was up 1.0 percent in the September 2011 quarter.
- Household consumption expenditure was up 1.5 percent.
- For the year ended September 2011, expenditure on GDP was up 1.4 percent.



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22 December 2011  
ISSN 1178-0290

## Commentary

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- [Real gross national disposable income up 2.8 percent for the year](#)
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## New Zealand economy grows 0.8 percent

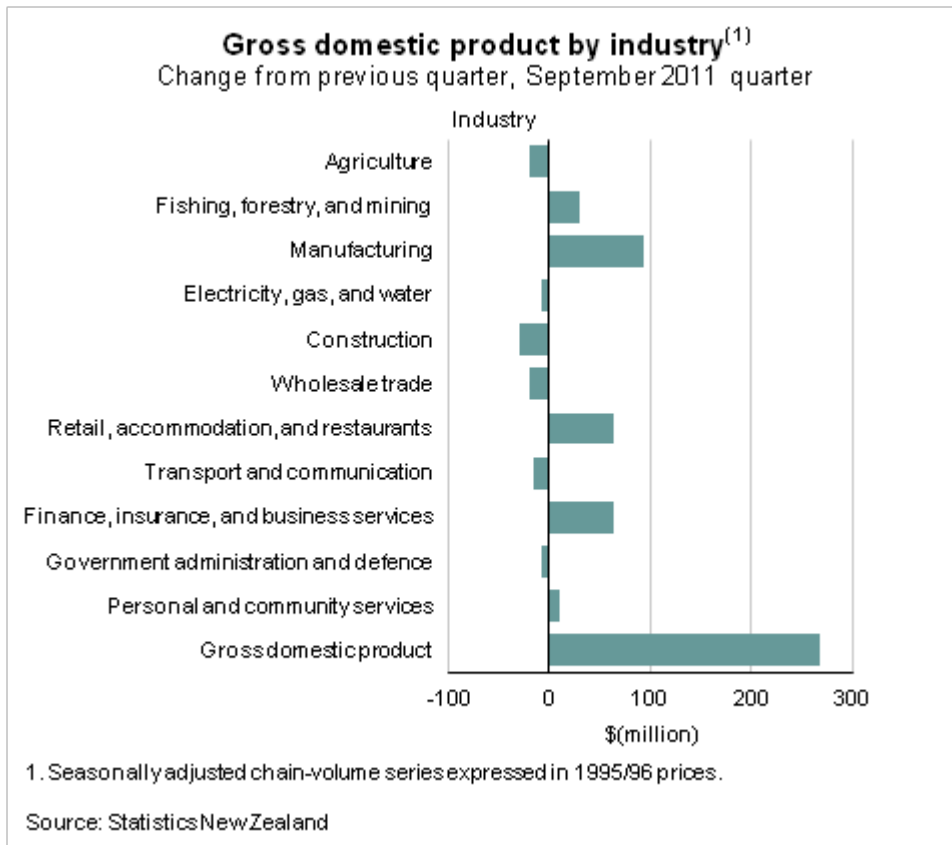
### Gross domestic product

Gross domestic product (GDP) was up 0.8 percent in the September 2011 quarter, following a 0.1 percent increase in the June 2011 quarter. The increase in the latest quarter is the fourth consecutive quarter of growth following a decline of 0.1 percent in the September 2010 quarter.

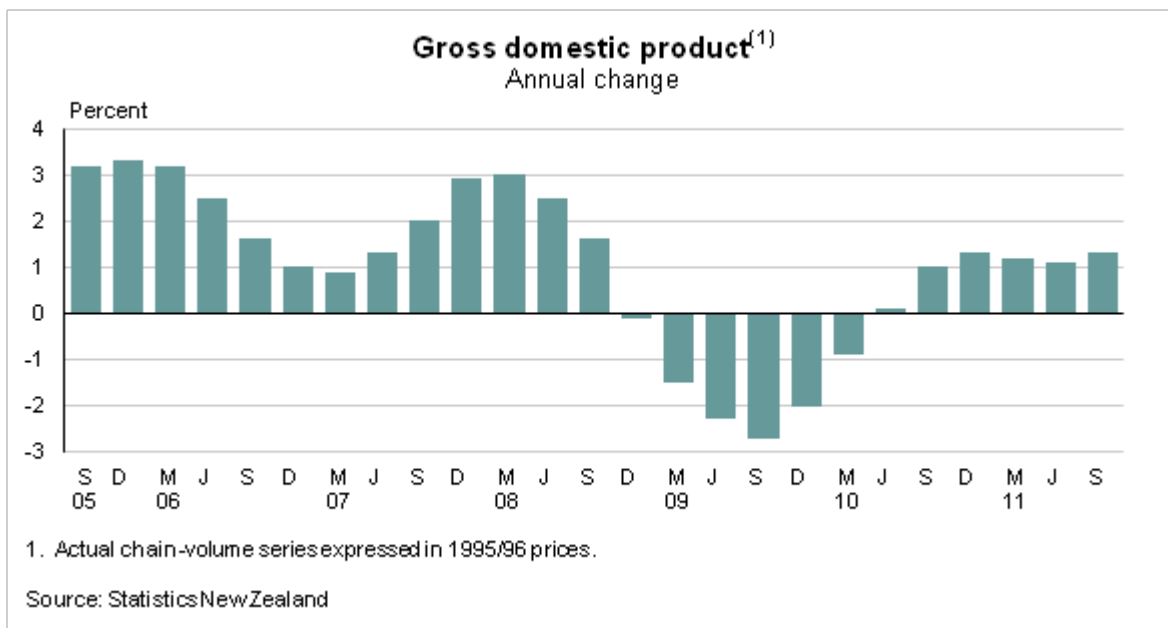
In the September 2011 quarter, the increase in economic activity was due to rises of 0.5 percent in the services industries, 0.8 percent in the goods-producing industries, and 0.5 percent in the primary industries.

The main movements by industry this quarter were:

- manufacturing (up 2.3 percent) – food, beverage, and tobacco manufacturing was the largest contributor
- retail, accommodation, and restaurants (up 2.5 percent) – the largest quarterly increase since the March 2007 quarter
- finance, insurance, and business services (up 0.6 percent) – the fourth consecutive quarter of growth
- construction (down 2.2 percent) – now at its lowest quarterly level since the June 2002 quarter.



Economic activity for the year ended September 2011 was up 1.3 percent when compared with the year ended September 2010. Expenditure on GDP for the year ended September 2011 was up 1.4 percent when compared with the previous year.



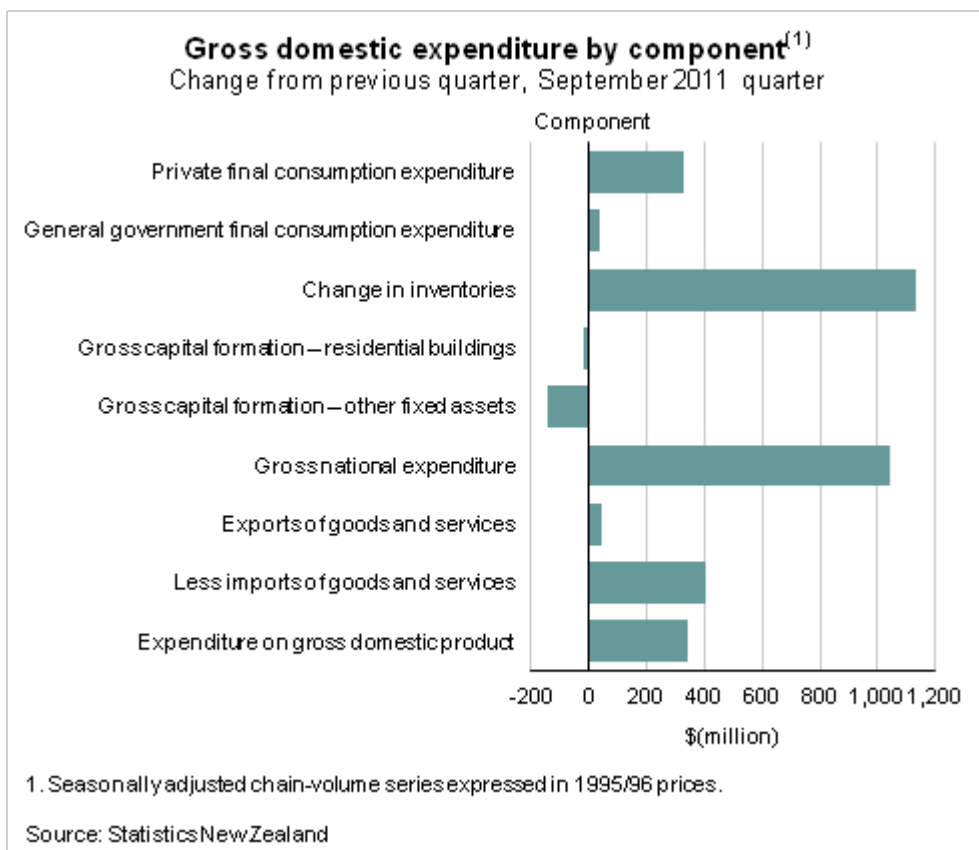
## Expenditure measure of GDP

The expenditure measure of GDP rose 1.0 percent in the September 2011 quarter. The expenditure and production measures of GDP are conceptually the same. The production

measure of GDP measures the volume of goods and services produced in the economy, while the expenditure measure shows how those goods and services were used.

The main movements in the expenditure measure of GDP this quarter were:

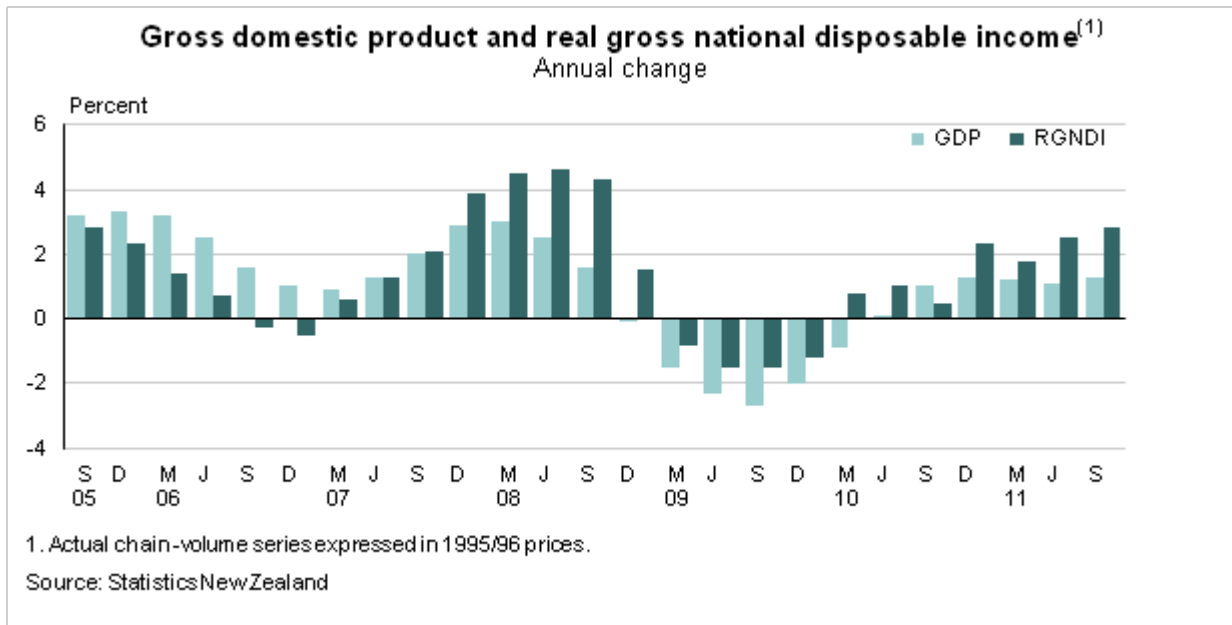
- household consumption expenditure (up 1.5 percent), driven by a rise in the volume of expenditure on non-durables
- a build-up in total inventories (up \$1,132 million), driven by increases in manufacturing and distribution inventories
- export volumes of goods and services increased 0.4 percent, while import volumes increased 3.1 percent
- general government final consumption expenditure increased 0.6 percent, driven by increases in both central and local government final consumption expenditure.



## Real gross national disposable income up 2.8 percent for the year

Real gross national disposable income (RGNDI) increased 2.8 percent for the year ended September 2011, while GDP grew 1.3 percent over the same period. The difference between RGNDI and GDP for this year was mainly due to an increase in the terms of trade effect. Current price exports of goods and services increased 9.5 percent for the year ended September 2011, while prices of exports increased more than prices of imports over the same period. This relative price change is consistent with the merchandise terms of trade, which reached a 37-year high in the June 2011 quarter, as reported in the [Overseas Trade Indexes \(Prices\): September 2011 quarter](#) information release. A higher terms of trade means that more imports can be funded by a fixed quantity of exports.

While GDP is a measure of domestic production or economic activity over a given time period, RGNDI can be viewed as a broad welfare indicator. Net flows of income with the rest of the world are also included in RGNDI, as not all of the income generated by domestic production accrues to New Zealand residents. RGNDI measures the volume of goods and services New Zealand residents have command over. The net flows with the rest of the world are measured as changes in the terms of trade (terms of trade effect) and real gains from net investment and transfer income.

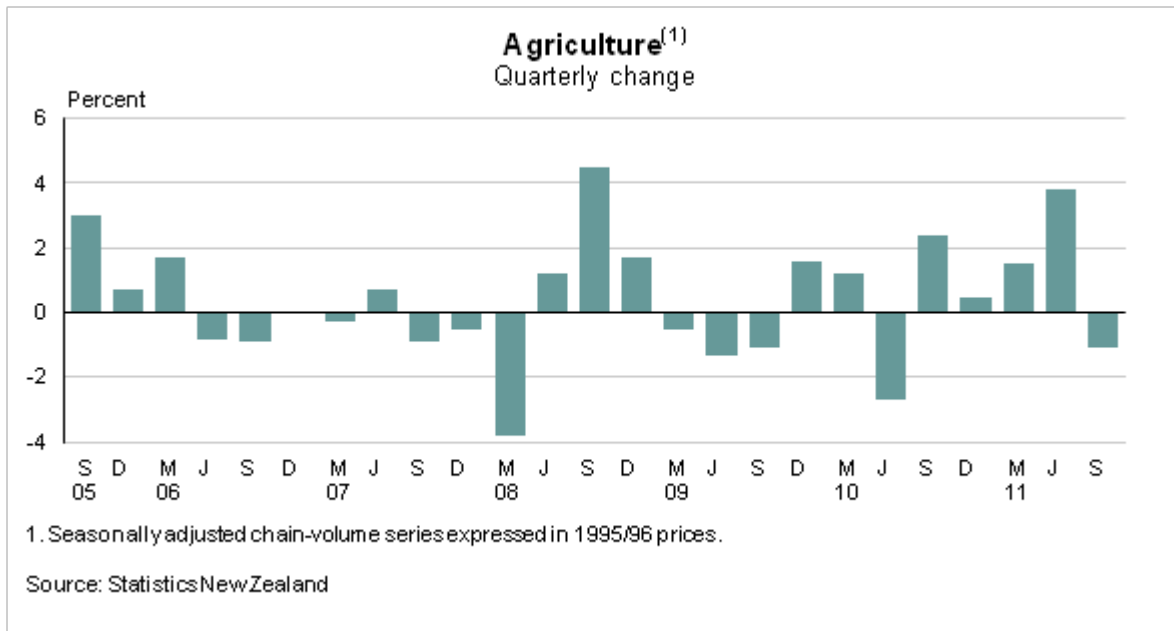


## Gross domestic product by industry

### Primary industries up slightly

Activity in the primary industries increased 0.5 percent in the September 2011 quarter, following a 1.7 percent rise in the June 2011 quarter. The main contributor to the latest increase was a 6.2 percent increase in mining activity, mainly due to a rise in oil and gas extraction. This is the first quarterly increase in mining activity since a 5.6 percent increase in the June 2010 quarter.

Agriculture activity declined 1.1 percent in the September 2011 quarter, due to decreases in both dairy and livestock production. This is the first decline in agriculture activity since a 2.7 percent fall in the June 2010 quarter.



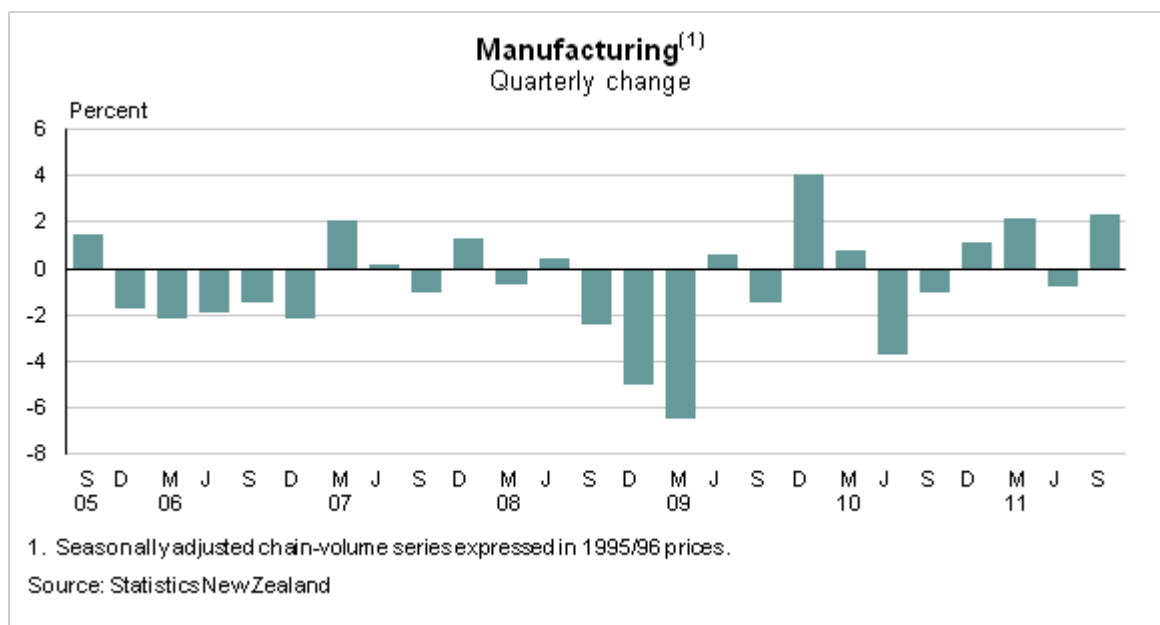
Forestry and logging activity declined 0.4 percent in the September 2011 quarter. This follows a decline of 0.1 percent in the June 2011 quarter. In the latest quarter, exports of forestry primary products declined (down 3.9 percent). Fishing, a small and variable industry, declined 2.4 percent.

For the year ended September 2011, primary industry activity increased 1.9 percent. The main contributor to the increase was a 4.0 percent increase in the agriculture industry.

### **Manufacturing drives growth in goods-producing industries**

Activity in goods-producing industries increased 0.8 percent in the September 2011 quarter, following a decline of 1.3 percent in the June 2011 quarter. Manufacturing, up 2.3 percent, was the main contributor to the latest increase. Partly offsetting this increase was a fall in construction activity, down 2.2 percent.

The increase in manufacturing activity is the largest rise since a 4.1 percent increase in the December 2009 quarter. The latest rise follows a fall of 0.8 percent in the June 2011 quarter.



The largest contributors to the increase in manufacturing activity this quarter were:

- food, beverage, and tobacco manufacturing (up 6.3 percent), which had the largest quarterly increase since the September 2002 quarter. The latest rise is partly due to increased manufacturing of meat and dairy products
- wood and paper products manufacturing (up 3.3 percent). With exports of wood and paper products decreasing this quarter (down 1.9 percent), the latest rise contributed to the build-up in manufacturing inventories, as seen in the expenditure measure of GDP.

The different results for meat and dairy product manufacturing in GDP and the Economic Survey of Manufacturing (ESM) can be accounted for by different concepts and data sources.

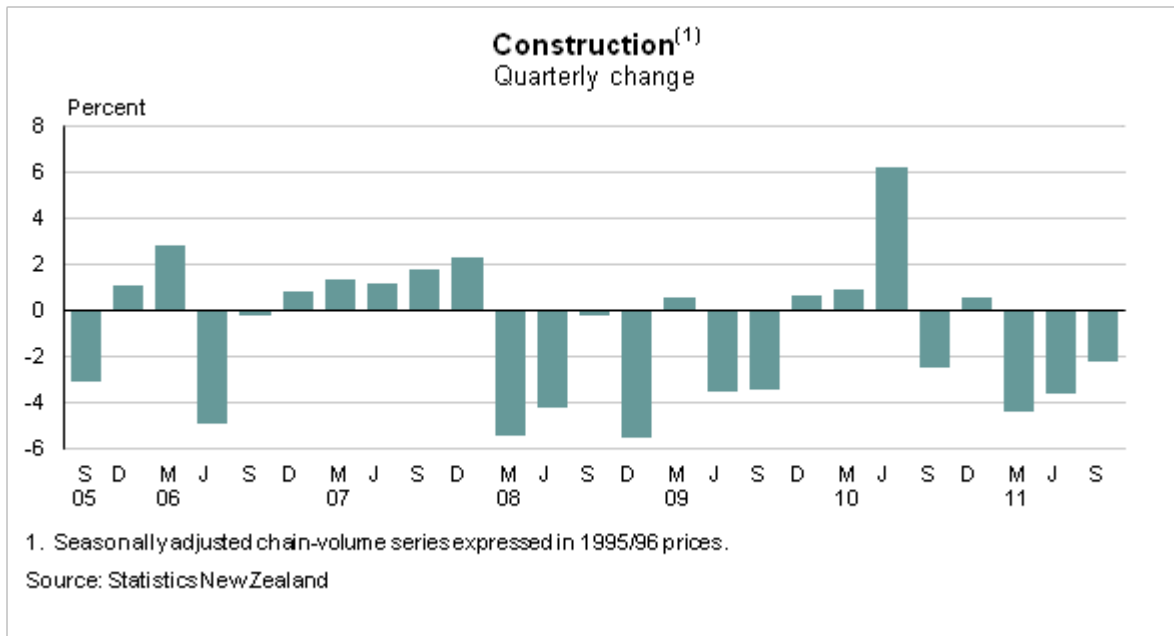
The [Economic Survey of Manufacturing: September 2011 quarter](#) reported a 1.9 percent decline in the volume of meat and dairy sales. The production measure of GDP uses pure volume measures to calculate value added in the meat and dairy product manufacturing industry. The ESM measures the change in sales.

Partly offsetting these increases in the manufacturing industry were falls in:

- petroleum, chemical, plastic, and rubber product manufacturing (down 3.8 percent)
- machinery and equipment manufacturing (down 1.8 percent)
- metal product manufacturing (down 1.6 percent).

The decreases in machinery and equipment manufacturing, and metal product manufacturing align with a decline in exports of metal products, machinery, and equipment.

In the September 2011 quarter, activity in the construction industry declined 2.2 percent. It is now at the lowest level since the June 2002 quarter. Within construction, falls were recorded in construction trade services, non-residential building, and non-building construction (which includes roads, bridges, and other construction). The decline in non-residential building activity is reflected in lower investment in non-residential building, as measured in gross fixed capital formation in the expenditure measure of GDP.



The Value of Building Work Put in Place: September 2011 quarter information release reported that non-residential building activity fell 4.6 percent. The value of total building work put in place in the Canterbury region followed a similar trend to that of New Zealand as a whole in the September 2011 quarter.

Activity in the electricity, gas, and water industry declined 1.0 percent in the September 2011 quarter. This is the largest fall since a 1.8 percent decrease in the March 2010 quarter. The decrease in the latest quarter was due to decreased electricity value added.

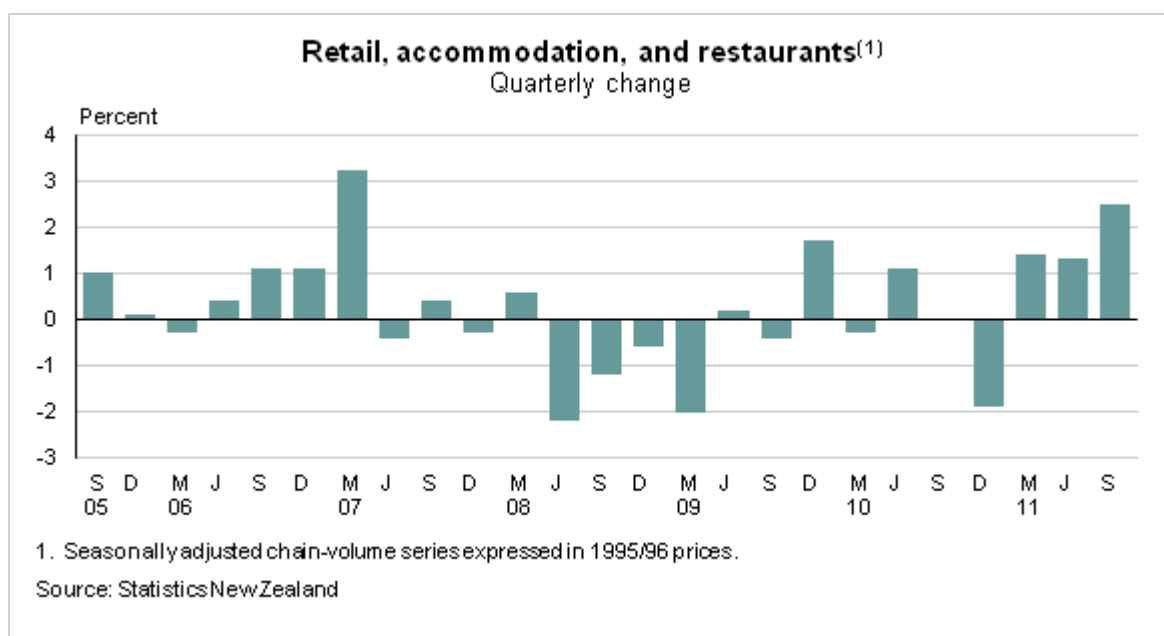
For the year ended September 2011, activity in the goods-producing industries declined 0.6 percent. This decrease compares with a 0.2 percent increase in the year ended September 2010. The latest decrease was due to a 3.7 percent decrease in construction activity. Partly offsetting this decrease was increased activity in the manufacturing and electricity, gas, and water industries, up 0.3 percent and 0.9 percent, respectively.

### **Service industries up for sixth consecutive quarter**

Activity in the services industries increased 0.5 percent in the September 2011 quarter, the sixth consecutive quarterly rise. The latest increase follows a 0.5 percent rise in the June 2011 quarter. The retail, accommodation, and restaurants; and finance, insurance, and business services industries drove the latest rise.

Retail, accommodation, and restaurant activity increased 2.5 percent in the September 2011 quarter, following an increase of 1.3 percent in the June 2011 quarter. This quarter's rise is the largest since a 3.2 percent increase in the March 2007 quarter.





Within retail, accommodation, and restaurants, activity in retail trade (up 1.8 percent) was the main driver of the increase in the latest quarter. This rise in retail trade was driven by an increase in supermarket and grocery stores retailing. This is reflected in non-durables (up 3.3 percent) as measured in household consumption in the expenditure measure of GDP.

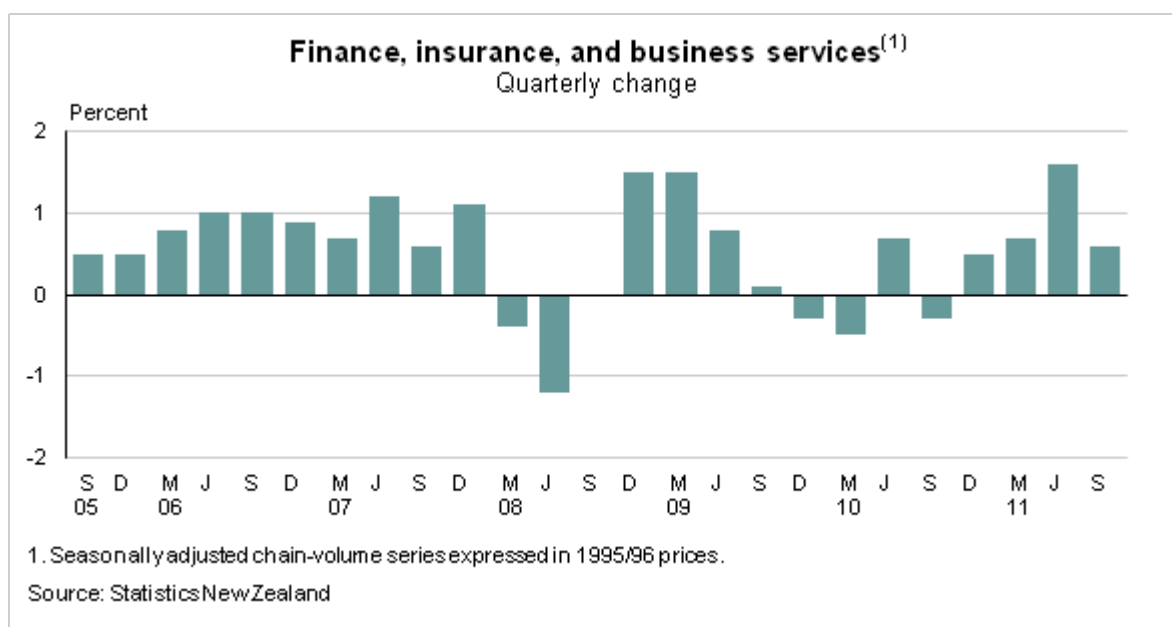
Included in retail trade are supermarkets, grocery stores, and other household goods retailers. Activity from spectators and participants, such as the purchase of merchandise and souvenirs related to the Rugby World Cup (RWC), is included in this industry. For information on the effects of the RWC in quarterly gross domestic product see [Treatment of the 2011 Rugby World Cup in New Zealand's balance of payments and national accounts](#).

Increases in accommodation and restaurant activity (up 4.8 percent) also contributed to the rise in the retail, accommodation, and restaurants industry in the September 2011 quarter. This is the largest quarterly increase in accommodation and restaurants since the series started (in the June 1987 quarter) and was driven by a rise in accommodation activity.

The [International Travel and Migration: September 2011](#) release reported 74,400 RWC visitor arrivals in the September month alone. Accommodation services used by visitors and New Zealand residents as a result of the RWC are included in the accommodation and restaurants industry.

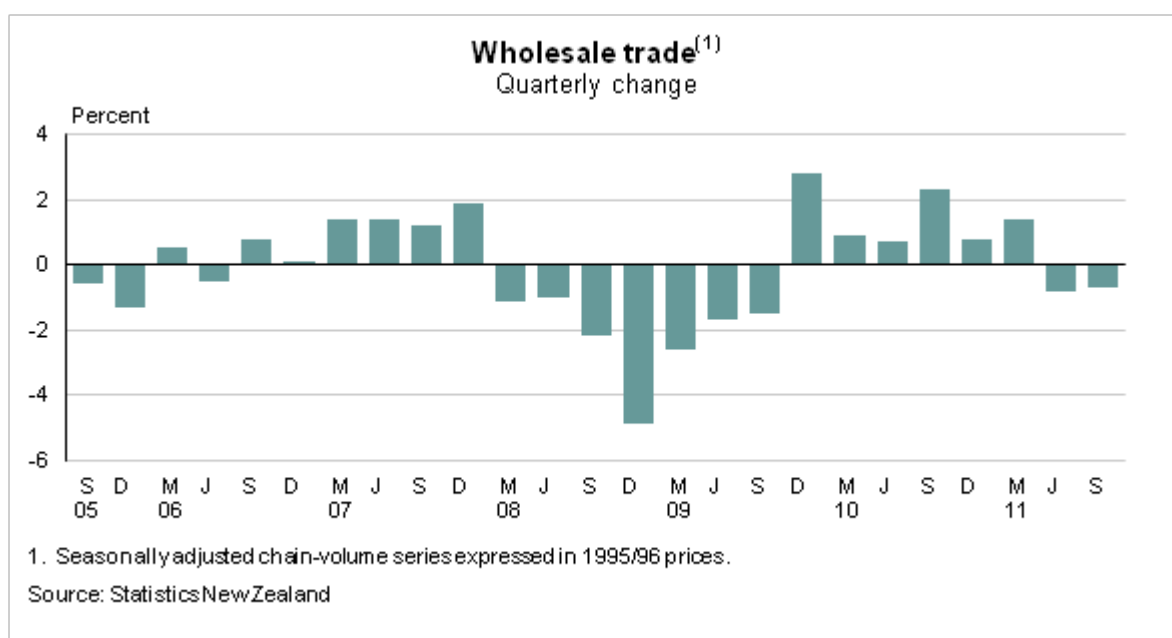
Activity in finance, insurance, and business services also rose in the September 2011 quarter, up 0.6 percent. This follows a 1.6 percent increase in the June 2011 quarter. Driving the increase this quarter were:

- real estate and business services (up 0.9 percent)
- finance and insurance activity (up 0.6 percent).



Partly offsetting the increases in the service industries were:

- wholesale trade activity (down 0.7 percent)
- transport and communication activity (down 0.4 percent), driven by a 1.2 percent decrease in communication services
- government administration and defence activity (down 0.4 percent).



The decline in government administration and defence was due to a 1.4 percent decrease in central government administration and defence activity. This is the largest quarterly fall since a 1.7 percent decrease in the September 2009 quarter. The decline in central government administration and defence in the latest quarter was due to a decline in defence activity.

For the year ended September 2011, service industries had a 1.5 percent increase in activity, compared with a 0.7 percent increase for the year ended September 2010.

## Expenditure on gross domestic product up 1.0 percent

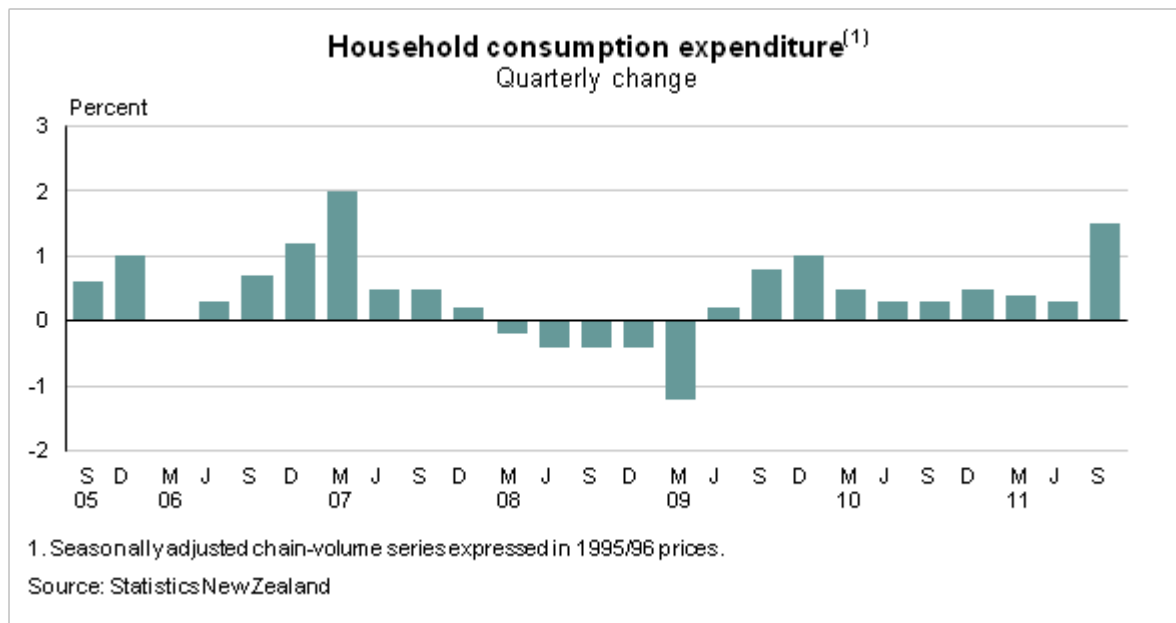
Expenditure on GDP increased 1.0 percent in the September 2011 quarter, following an increase of 0.1 percent in the June 2011 quarter.

While the production-based measure and expenditure-based measure are both official series, the production-based measure has historically shown less volatility and is the preferred series for quarter-on-quarter changes.

For the year ended September 2011, expenditure on GDP increased 1.4 percent, compared with a 1.9 percent increase for the year ended September 2010.

## Largest increase in household expenditure in more than four years

Household final consumption expenditure increased 1.5 percent in the September 2011 quarter. Household consumption expenditure measures the volume of spending on goods and services by New Zealand-resident households. The September 2011 quarter increase is the largest since a 2.0 percent increase in the March 2007 quarter.



The volume of durable goods purchased by New Zealand households increased 0.8 percent in the September 2011 quarter, following an increase of 1.0 percent in the June 2011 quarter. The volume of household expenditure on durables has increased in eight of the last nine quarters. The increase in the latest quarter was the result of increased spending on recreational goods and new vehicles. The increase in spending on new vehicles is consistent with increased imports of cars. Partly offsetting these increases was a decrease in spending on furniture and major appliances.

Household consumption of non-durable goods increased 3.3 percent in the September 2011 quarter, following a 1.2 percent decrease in the June 2011 quarter. The main driver of the increase in the volume of expenditure on non-durable goods was supermarket spending. This increase is consistent with the increase in retail trade activity as measured in the production measure of GDP. The increase in the volume of expenditure on non-durable goods was the largest since a 3.5 percent increase in the March 1996 quarter.

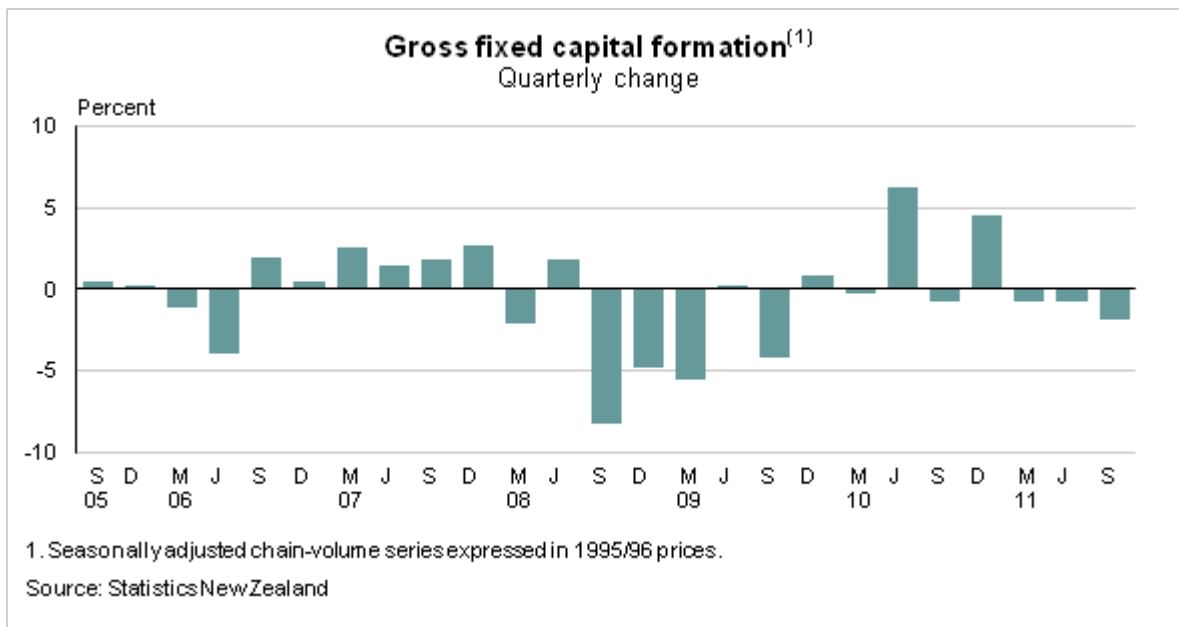
The volume of household expenditure on services increased 0.7 percent in the September 2011 quarter, following a flat June 2011 quarter. The latest increase was due to increased spending on food and alcohol in restaurants, which was partly offset by a decrease in spending on overseas travel.

Conceptually, spending by New Zealand residents overseas is included in household consumption expenditure as it is spending by New Zealand households. Spending by overseas visitors in New Zealand is subtracted from household consumption expenditure as it is not spending by New Zealand households. The volume of spending by New Zealand residents overseas increased 3.0 percent during the September 2011 quarter. Spending by overseas visitors in New Zealand increased 1.0 percent.

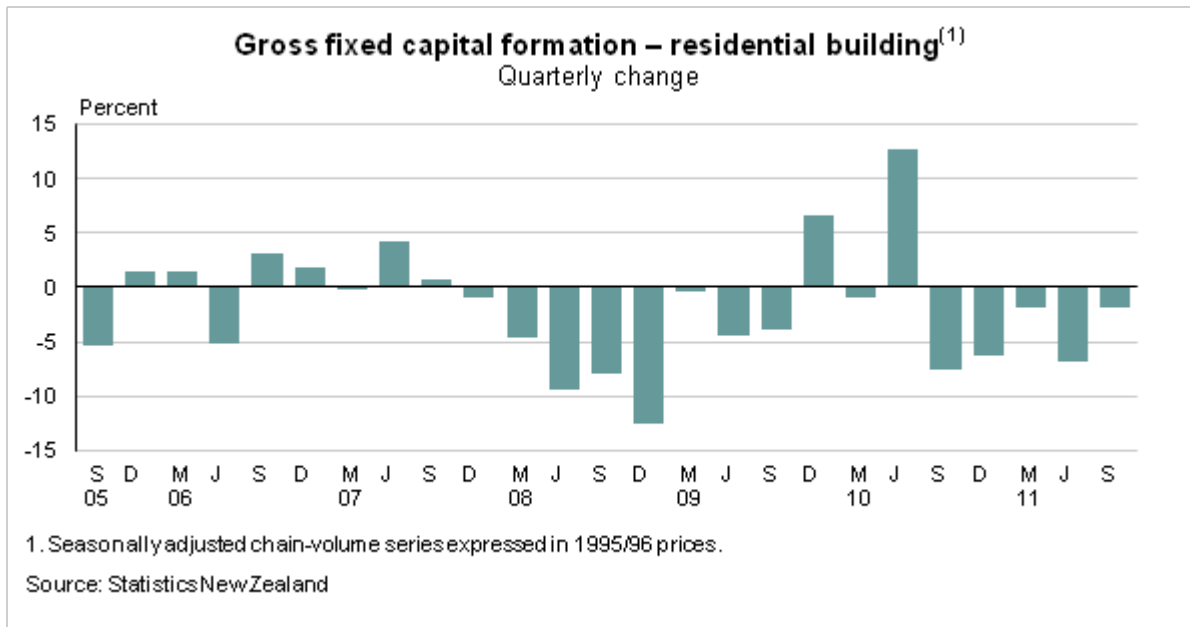
For the year ended September 2011, the volume of household consumption expenditure increased 1.9 percent, compared with a 1.8 percent increase in the year ended September 2010. This rise was due to increased spending on durables (up 3.0 percent), services (up 1.1 percent), and non-durables (up 0.5 percent).

### Investment in infrastructure and residential building down

Gross fixed capital formation (GFKF) decreased 1.9 percent in the September 2011 quarter. GFKF consists of business investment plus residential building investment.



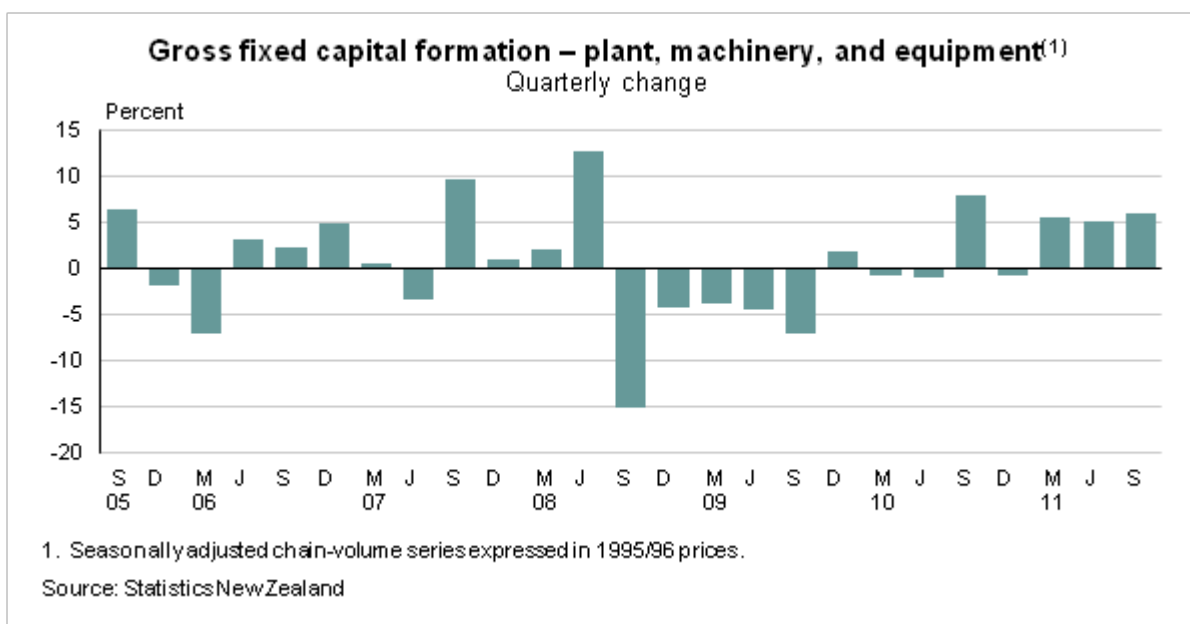
Investment in residential buildings declined 1.8 percent in the September 2011 quarter, following a 6.9 percent decrease in the June 2011 quarter. Investment in residential buildings is at its lowest level since the June 1993 quarter. This decline is reflected in lower construction activity, as measured in the production measure of GDP. The [Value of Building Work Put in Place: September 2011 quarter](#) information release reported no change in residential building activity in the quarter. For the year ended September 2011, residential building investment decreased 11.4 percent.



Business investment in fixed assets decreased 1.9 percent in the September 2011 quarter. The main contributors to this decrease were investment in:

- other construction (down 6.5 percent), which includes infrastructure investment in roads, bridges, rail, and the national grid
- non-residential building (down 7.1 percent), consistent with the decline recorded in *Value of Building Work Put in Place: September 2011 quarter*
- transport equipment (down 9.7 percent), which includes investment in trains and aircraft.

Partly offsetting these decreases was a 6.0 percent increase in investment in plant, machinery, and equipment. This increase is consistent with an increase in imports of these types of goods this quarter.



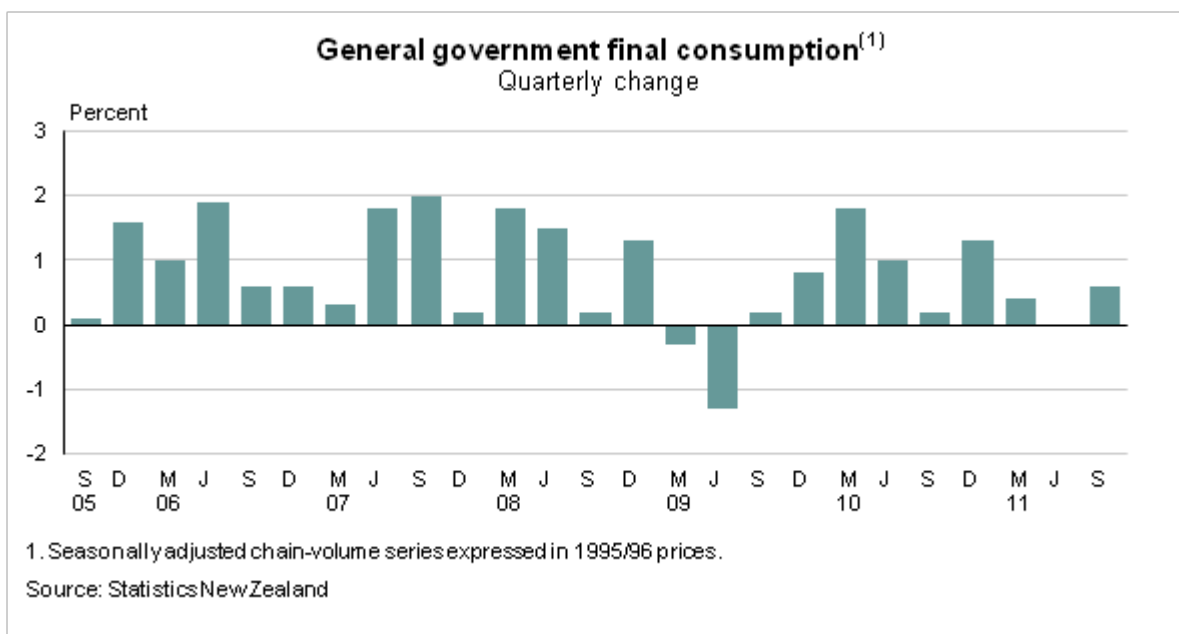
For the year ended September 2011, GFKF increased 5.5 percent and business investment increased 10.8 percent. The main contributors to these increases were plant, machinery, and equipment (up 13.3 percent), transport equipment (up 37.1 percent), and other construction (up 12.7 percent).

### Build-up in manufacturing and distribution inventories

Total inventories were built up by \$1,132 million in the September 2011 quarter, following a build-up of \$284 million in the June 2011 quarter. Manufacturing inventories increased by \$475 million, driven mainly by a build-up in food, beverage, and tobacco inventories. This build-up is consistent with the increase in manufacturing activity. There was also a build-up of \$371 million in distribution inventories, which is due to higher levels of retail trade and wholesale trade stocks.

### Government final consumption expenditure up 0.6 percent

General government final consumption expenditure increased 0.6 percent in the September 2011 quarter, following a flat June 2011 quarter. Central government expenditure increased 0.3 percent in the latest quarter, mainly due to a rise in the volume of spending on health.



Local government final consumption expenditure increased 2.6 percent in the September 2011 quarter, following a 1.1 percent decrease in the June 2011 quarter.

For the year ended September 2011, general government final consumption expenditure increased by 2.8 percent, compared with 2.2 percent for the year ended September 2010. The largest increase in government expenditure in the latest year was a 5.6 percent increase in central government administration.

The annual increase in expenditure in central government administration was due to:

- preparation for the scheduled 2011 Census of Population and Dwellings
- increased numbers of personnel employed by the Department of Internal Affairs (including those employed by Civil Defence)
- increased numbers of contractors working for the Earthquake Commission.

## **Export volumes of services up, goods down**

Export volumes of goods and services increased 0.4 percent in the September 2011 quarter, following a decrease of 0.4 percent in the June 2011 quarter.

The volume of goods exported decreased by 1.8 percent in the September 2011 quarter. The main drivers of this decrease were decreases in dairy exports and meat exports.

Exports of services increased 7.2 percent in the September 2011 quarter, following a 6.8 percent fall in the June 2011 quarter. The increase in the latest quarter was driven by exports of transport services (up 12.7 percent) and exports of travel services (up 2.0 percent). Overseas visitors' expenditure is recorded in the period that they leave New Zealand. This may be a different period to when they arrive in New Zealand.

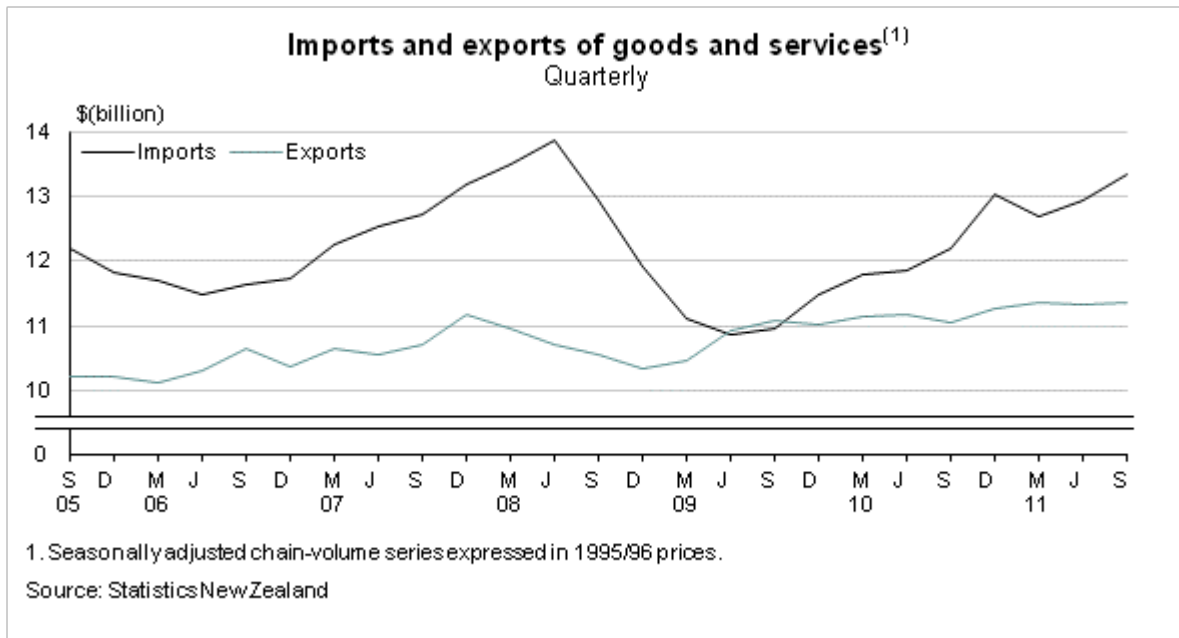
## **Import volumes up**

Import volumes of goods and services increased 3.1 percent in the September 2011 quarter, following a 2.0 percent increase in the June 2011 quarter.

The volume of goods imported increased 3.0 percent in the September 2011 quarter. The main contributors to this increase were increases in imports of machinery and plant (up 13.5 percent) and cars (up 21.6 percent). The increase in machinery and plant imports is reflected by the increase in plant, machinery, and equipment investment. The increase in imports of cars is consistent with increases in motor vehicle retailing activity and household consumption expenditure on new vehicles. Partly offsetting these increases was a 4.9 percent decrease in intermediate goods imports. Intermediate goods are goods which are used up in the production process.

The volume of services imported increased 4.1 percent in the September 2011 quarter. Royalties were the main contributor to this increase. This includes tournament hosting and broadcast fees related to the RWC.

For the year ended September 2011, export volumes increased 2.1 percent, driven mainly by dairy export volumes. Over the same period, import volumes increased 9.9 percent, with capital goods (up 26.6 percent), intermediate goods (up 10.5 percent), and consumer goods (up 7.2 percent) all recording large increases.



### Implicit price deflator up 4.8 percent

The GDP implicit price deflator (IPD) for the year ended September 2011 increased 4.8 percent. The GDP IPD is a broad measure of the overall price change for final goods and services produced in New Zealand.

The IPD for gross national expenditure increased 3.0 percent for the year ended September 2011. This provides a broad measure of the overall price change for final goods and services purchased in New Zealand (such as consumer and investment goods).

The consumers price index (CPI) increased 4.6 percent for the year ended September 2011 (see [Consumers Price Index: June 2011 quarter](#)). The CPI measures the rate of price change of goods and services purchased by households.

The rate of goods and services tax (GST) was increased from 12.5 percent to 15 percent on 1 October 2010.



## Definitions

### About gross domestic product

Gross domestic product (GDP) is New Zealand's official measure of economic growth.

Three different approaches can be taken to calculate GDP – the production approach, the expenditure approach, and the income approach. The production and expenditure approaches are used to calculate New Zealand's GDP on a quarterly basis. The production approach is available on a chain-volume basis, while the expenditure approach is on a chain-volume basis, and in current prices. Chain-volume estimates have the effect of price change (inflation) removed from them.

The **production approach** to GDP measures the total value of goods and services produced in New Zealand, after deducting the cost of goods and services used in the production process. This is also known as the value-added approach.

The **expenditure approach** to GDP (also known as GDE) measures the final purchases of goods and services produced in the New Zealand domestic territory. Exports are added to domestic consumption, as they represent goods and services produced in New Zealand, while imports are subtracted. Imports represent goods and services produced by other economies.

Conceptually, both the production-based and expenditure-based GDP series should produce the same growth rates, because what is produced by an economy should equal what is used. However, as each series uses independent data and estimation techniques, some differences between the alternative measures arise. The expenditure-based series has historically shown more quarterly volatility and is more likely to be subject to timing and valuation problems. For these reasons, the production-based measure is the preferred measure for quarter-on-quarter and annual changes.

### More definitions

**Broad industry groups:** in tables 2.1 and 2.4, industry groups are combined to form the following broad groupings, based on the Australian and New Zealand Standard Industrial Classification (ANZSIC):

- primary industries (agriculture; fishing, forestry, and mining)
- goods-producing industries (manufacturing; electricity, gas, and water; construction)
- service industries (wholesale trade; retail, accommodation, and restaurants; transport and communications; finance, insurance, and business services; government administration and defence; personal and community services).

As well as these industrial groupings, there is an 'unallocated' category, which includes the nominal industry and unallocated taxes on production and imports (import duties, GST, and taxes on capital transactions).

**Business investment:** measures the investment of producers in land improvements; non-residential building; other construction; transport equipment; plant, machinery, and equipment; and intangibles (mining exploration and computer software).

**Change in inventories:** Change in the value of inventories of raw materials, work-in-progress, and finished goods, over a given period. The change is measured in the appropriate prices in the market at the time additions and withdrawals are made. The correct valuation of the change in inventories requires continually updated data on the quantities of individual commodities held in stock together with appropriate prices. As this data is rarely available, the usual practice is to revalue stocks at the end of the period in order to approximate as closely as possible the value of the physical change in stocks during a given period.

**Chain-volume series expressed in 1995/96 prices:** The series in this release are chain-linked and expressed in the average prices of the 1995/96 year. They are best described as annually reweighted, chained Laspeyres volume indexes. Series are expressed in 1995/96 dollars rather than as index numbers, since this has the advantage of showing the relative size of each component. For more information on chain-volume series, please refer to 'Constructing a chain-volume series' in the [Data quality](#) section of this release.

**Durable goods:** are goods that are not consumed in one use (eg appliances and electronic goods).

**Gross fixed capital formation:** Outlays of producers on durable fixed assets, such as buildings, motor vehicles, plant and machinery, hydro-electric construction, roading, and improvements to land. 'Gross' indicates that consumption of fixed capital is not deducted from the value of the outlays.

**Gross national disposable income (GNDI):** is the income received (less income payable) by New Zealand residents, from both domestic and overseas sources, after taking account of income redistribution by way of international transfers, or gross national income (GNI) plus international transfers.

**Household consumption expenditure (HCE):** is an estimate of total expenditure by New Zealand resident households. It includes expenditure by New Zealand households overseas but does not include expenditure by overseas tourists in New Zealand.

**Implicit price deflators:** Table 5.1 contains implicit price deflators (IPDs) for expenditure on GDP and its components. IPDs provide a broad measure of price change for total economic activity and each of the expenditure components.

**Non-durable goods:** are goods that are either consumed immediately in one use or within 3 years.

**Real gross national disposable income (RGNDI):** measures the real purchasing power of national disposable income, taking into account changes in the terms of trade, and real gains from net investment and transfer income with the rest of the world. Effectively, it is a measure of the volume of goods and services New Zealand residents have command over. For more information on calculating RGNDI, please refer to 'Calculating real gross national disposable income' in the [Data quality](#) section of this release.

**Services:** products other than tangible goods. Services result from production activity that changes the conditions of the consuming units, or makes the exchange of products or financial assets possible.

**Value added:** income formed in the production process. Value added equals output minus intermediate consumption. Value added is the income available to reward the production factors involved.

## **Related links**

### **Upcoming releases**

*Gross Domestic Product: December 2011 quarter* will be released on 22 March 2012.

The [release calendar](#) lists all our upcoming information releases by date of release.

### **Past releases**

See [Gross Domestic Product – information releases](#) for links to past releases.

### **Related information**

[National accounts](#) provides an annual measure of economic aggregates in the New Zealand economy.

## Data quality

### Period-specific information

This section contains data information that has changed since the last release.

- [Reference period](#)
- [No incorporation of annual data this quarter](#)

### General information

This section contains information that does not change between releases.

- [Data source](#)
- [Implementing Australian and New Zealand Standard Industry Classification 2006 \(ANZSIC06\)](#)
- [The System of National Accounts](#)
- [Constructing a chain-volume series](#)
- [Revisions resulting from chain-linking](#)
- [Calculating real gross national disposable income](#)
- [Calculating implicit price deflators](#)
- [Revisions policy](#)
- [Interpreting the data](#)
- [Confidentiality and accessing the data](#)
- [More information](#)

## Period-specific information

### Reference period

Information for this release was collected for the period July – September 2011.

### No incorporation of annual data this quarter

The [National Accounts: Year ended March 2011](#) was released on 18 November 2011. This annual data provides benchmarks that set the level of economic activity. Indicators used by quarterly GDP estimate the movements of the series. As annual data is sourced from a larger range of data, it is often more complete. Quarterly estimates of industries in GDP and the components of GDP(E) are reconciled to annual estimates to ensure that the most robust picture of economic activity is being shown. This is usually undertaken after updated current price GDP data is released in the national accounts.

The annual national accounts is now using the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06). The first release of quarterly GDP under ANZSIC06 will be on 21 June 2012, when data for the March 2012 quarter is released.

Due to this difference in the timing of implementation, the new annual benchmarks will not be incorporated this quarter. These will be incorporated with the March 2012 release of GDP.

More information on [National Accounts: Year ended March 2011](#) can be found on the Statistics NZ website, [www.stats.govt.nz](http://www.stats.govt.nz).

## General information

### Data source

The sources and methods used in compiling quarterly GDP are presented in Quarterly Gross Domestic Product: Sources and Methods (Second edition). A free electronic version is available on the Statistics NZ website ([www.stats.govt.nz](http://www.stats.govt.nz)) or contact the Information Centre (call toll-free 0508 525 525 or email [info@stats.govt.nz](mailto:info@stats.govt.nz)) for hard copies.

### Implementing Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06)

The production measure of GDP is presented by industry. The industry classification that Statistics NZ uses is ANZSIC, and the version that is used for GDP is ANZSIC96. Statistics NZ is currently in the process of converting to the latest standard, ANZSIC06. For more information about the implementation of ANZSIC06, refer to Introduction to ANZSIC 2006 on the Statistics NZ website ([www.stats.govt.nz](http://www.stats.govt.nz)).

### The System of National Accounts

The conceptual framework used in compiling New Zealand's national accounts and GDP is based on the System of National Accounts 1993 (SNA93). The SNA93 is jointly published by the United Nations, The Commission of the European Communities, the International Monetary Fund, the Organisation for Economic Co-operation and Development, and the World Bank.

The latest international standard for national accounts compilation is the System of National Accounts 2008 (SNA08). So far, Australia is the only country to have adopted SNA08. European countries are targeting 2015 for implementation of the new standard. Statistics New Zealand is likely to introduce SNA08 into the NZ accounts after 2012.

### Constructing a chain-volume series

The chain-volume measures of GDP and expenditure on GDP are constructed by:

- (a) compiling a Laspeyres volume index of the component in question, using the previous year's prices as weights; and then
- (b) chaining the sequence of annual movements to produce a continuous time series.

This procedure is used at different levels within the accounts. For example, GDP is compiled by weighting together the individual industry value-added components to produce a Laspeyres volume index for each quarter, and then linking the resulting indexes to produce the GDP time series. Each industry component, such as transport and communication, is also a chained-volume series. At the lowest level, the 'elemental series' are not chained and are either single series in their own right or fixed-weight series comprising a number of components. Chaining is not adopted, either because the detailed information needed for annual weights is not available, or relative price changes are not considered significant.

It is important to note that chain-volume series are not additive (ie the chain-volume series for an aggregate will not equal the sum of the values of its components). For a full explanation, see the report Chain Volume Measures in National Accounts, available on the Statistics NZ website

([www.stats.govt.nz](http://www.stats.govt.nz)). This report, published as a discussion document in 1998, contains a detailed discussion of the concepts and procedures used to compile chain-volume series.

In most cases, the industry 'elemental series' estimates that make up the production-based GDP are calculated by extrapolating value added, using indicator series that represent the quantities of output produced. The technique known as double deflation, by which volume value added is calculated as the difference between volume outputs and inputs, is not widely used. Double deflation is currently used for the agriculture and electricity industries on a quarterly basis, and for water transport, business services, cultural and recreational services, and personal and other services on an annual basis.

## Revisions resulting from chain-linking

One of the key benefits gained through adopting chain-volume measures in place of fixed-weight series is that the relative weights of the component series are more up-to-date. This reduces the likelihood of introducing biases in the volume measures, which would otherwise become progressively unrepresentative as relative prices change. However, the disadvantage is that the annual reweighting introduces another cause for revision.

Reweighting is part of the annual revisions cycle and is usually timed to coincide with the introduction of other new annual data from the current price GDP accounts. These changes are normally incorporated in the September quarter release, which is published at the end of December. Annual data has not been incorporated this quarter. Please refer to the 'No incorporation of annual data this quarter' section under 'Period-specific information' above.

The current price annual accounts provide the detailed component series needed for weighting the production-based series of GDP. There is usually a two-year time lag before these detailed series are available. The latest year for which up-to-date weights have been used for the production-based series is for the year ended 31 March 2007, and all subsequent quarters use these weights.

Current price data is available on a more timely basis for the components comprising the expenditure-based measure of GDP. As a result, the latest year for which up-to-date weights have been used for the expenditure-based series is for the year ended 31 March 2010, and all subsequent quarters use these weights.

When the weights are updated each year, this procedure results in revisions to all periods beyond the latest year for which detailed series are available (currently 2006/07 for the production-based measure and 2009/10 for the expenditure-based measure).

## Calculating real gross national disposable income

RGNDI is calculated as follows:

chain-volume measure of **gross domestic product** (production-based measure)  
plus a terms of trade effect (trading gain/loss)  
**equals real gross domestic income**  
plus real value of total net investment income  
**equals real gross national income**  
plus real value of total net transfers  
**equals real gross national disposable income**

where the terms of trade effect is defined as:  
current price exports deflated by an imports implicit price index  
**less** chain-volume measure of exports

and the real value of total net investment income equals:  
investment income credits  
**less** investment income debits  
all deflated by an imports implicit price index

and the real value of total net transfers equals:  
transfers credits  
**less** transfers debits  
all deflated by an imports implicit price index.

A per capita measure is simply the series in question divided by the projected population of New Zealand. From the March 1991 quarter onwards, the definition used is the 'estimated resident population of New Zealand'. This is defined as New Zealand residents currently in New Zealand plus those temporarily overseas. Overseas tourists visiting New Zealand are excluded from this measure. Before March 1991, the definition used was the 'de facto' population, which excludes New Zealand residents temporarily overseas and includes overseas tourists in New Zealand.

## Calculating implicit price deflators

Implicit price deflators are calculated by dividing the seasonally adjusted current price quarterly series by the equivalent chain-volume series, and consequently provide an estimate of price change between the base period and any other period, using the quantity weights in the latter period. Because weights change from period to period, a change in an IPD between any two periods, neither of which is the base period, reflects changes in both actual prices and weights or compositional changes. Significant compositional changes may result in the IPDs being an unreliable estimate of price change. This problem is more likely to occur in the gross national expenditure (GNE) and expenditure on GDP aggregates, because both include the change in inventories item, which is highly subject to compositional changes, including a change in sign.

## Revisions policy

Revisions to the previously published series may be made each quarter. The frequency and cause of these revisions are as follows:

- **Quarterly:** additional data becoming available for the latest quarters, which is used to replace existing estimates; revisions to quarterly data (eg revisions to the Balance of Payments or Retail Trade Survey), which will be incorporated as soon as possible to maintain consistency between published macro-economic statistics.
- **Annual:** introduction of annual data following the release of the latest annual national accounts each year; annual updating of the weights used to link component series to totals and subsequent chaining (see revisions resulting from chain-linking above).
- **Irregular:** for example, methodological changes. However, note that as far as possible, revisions of this nature are incorporated to coincide with the annual cycle of revisions outlined above or are discussed in a separate paper ahead of the changes.

In addition, each of the above causes for revision, and/or the addition of a new point in the actual quarterly series, has the potential to alter seasonal factors and therefore may lead to a revision in the seasonally adjusted series.

## **Interpreting the data**

### **Annual percentage changes**

When using annual percentage changes, care should be taken to ensure that the measures used are correctly understood. Those in tables 2.4, 2.5, and 3.3 compare the level of economic activity in the latest quarter with the level of activity in the corresponding quarter 12 months earlier. Tables 2.7 and 3.5, on the other hand, display the percentage change in the level of GDP and expenditure on GDP, respectively, for the annual period each quarter, compared with the same period 12 months earlier. Annual measures are calculated by summing the series for each four-quarter period, dividing by the sum of the series of the preceding four quarters, and then expressing this as a percentage.

### **Direct and indirect seasonal adjustment**

The level at which a series is seasonally adjusted is important, since it has the potential to affect the quality of that seasonally adjusted series. The individual component series of the main economic variables can be seasonally adjusted and then summed to derive totals. This is called an indirect seasonal adjustment. Alternatively, the main economic variables can be seasonally adjusted at the total level, independently of the seasonal adjustment of their components. The adjustment of the total of an aggregate series is called a direct seasonal adjustment. The indirect approach has the advantage of retaining additivity, but this applies only to the current price series. While the indirect approach conceptually also provides additivity for volume series, additivity is lost by chain-linking.

The direct approach will often give better results if the component series show similar seasonal patterns. At the most detailed level, the irregular factor may be large compared with the seasonal factor and therefore may make it difficult to perform a proper seasonal adjustment. In a small country such as New Zealand, irregular events can have a strong impact on particular data. However, if the component series show the same seasonal pattern, aggregation often reduces the impact of the irregular factors in the component series. This is particularly relevant for New Zealand, where many economic series are affected by seasonal fluctuations in the primary industries.

Statistics NZ has analysed both the direct and indirect approaches for the two quarterly GDP aggregates: production and expenditure on GDP. The direct approach has been chosen as the preferred method because the resulting series are smoother and more stable.

The residual between the seasonally adjusted components and the aggregates is referred to as the balancing item (see tables 1.2 and 1.3). The balancing item will often show significant seasonal variations. This is to be expected, as it captures the undetected seasonality in the component series.

The level at which seasonal adjustment is applied to quarterly GDP series may differ from other Statistics NZ surveys (eg the Economic Survey of Manufacturing and the Wholesale Trade Survey). These may contribute to differences in the aggregate seasonally adjusted series.

### **Use of Quarterly Employment Survey data**

Hours worked data from the Quarterly Employment Survey (QES) is used in the compilation of economic activity for the following industries:

- cultural and recreational services



- personal and other services
- health and community services
- business services
- water supply.

The QES now uses the ANZSIC06 industry classification, while GDP is still calculated using ANZSIC96. For the industries in GDP that use QES as an indicator, forward estimates of ANZSIC96, based on ANZSIC06 survey data, are being used.

## Confidentiality and accessing the data

Data collected and information contained in this publication must conform to the provisions of the Statistics Act 1975. This requires that published information maintains the confidentiality of individual respondents.

## More information

More [information about the quarterly gross domestic product](#) is available on our website.

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## Revisions

The following table gives a summary of the revisions made to the June 2011 quarter GDP.

June 2011 quarter	Revised (percentage change from last quarter)	Previously published (percentage change from last quarter)
Production measure of GDP	0.1	0.1
Expenditure measure of GDP	0.1	0.1

March 2011 quarter	Revised (percentage change from last quarter)	Previously published (percentage change from last quarter)
Production measure of GDP	0.7	0.9
Expenditure measure of GDP	0.5	0.5

December 2010 quarter	Revised (percentage change from last quarter)	Previously published (percentage change from last quarter)
Production measure of GDP	0.3	0.6
Expenditure measure of GDP	0.3	0.5

A number of revisions were incorporated into GDP for the September 2011 quarter. Details of these revisions are discussed below.

Production measure of GDP:

- Agriculture; transport and storage; real estate and business services; and education were revised due to the incorporation of new annual benchmarks.
- Updated source data resulted in revisions to the forestry and logging; mining; manufacturing; electricity, gas, and water supply; construction; and finance and insurance components.
- Communication services was revised due to updated annual indicator weights.
- There were significant revisions to the December 2010 and March 2011 quarters. These were mainly due to updated respondent and Economic Survey of Manufacturing data in the metal product manufacturing industry. As a result, December 2010 quarter data for this industry was revised from 0.6 percent to 0.3 percent, and March 2011 quarter was revised from 0.9 percent to 0.7 percent.

Expenditure measure of GDP:

- Household consumption expenditure was revised due to updated source data for telecommunications, electricity, insurance, fringe benefits, and recreation admission charges.
- Local government expenditure was revised due to updated annual benchmarks.
- Central government expenditure was revised due to updated annual benchmarks and updated source data for intermediate consumption.

- Imports and exports of goods and services were revised due to updated overseas trade and balance of payments data.
- Gross fixed capital formation (GFKF) was revised due to updated annual benchmarks and updated source data for transport equipment.
- Inventories were revised due to updated source data for agriculture, forestry, manufacturing, and distribution stocks.

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## Tables

The following tables are included with this release. They are available in Excel format from the 'Downloads' box of *Gross Domestic Product: September 2011 quarter* on the Statistics NZ website.

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.

- 1.1 Gross domestic product, revisions summary
- 1.2 Gross domestic product by industry, chain-volume series expressed in 1995/96 prices
- 1.3 Expenditure on gross domestic product, chain-volume series expressed in 1995/96 prices
- 2.1 Gross domestic product by broad industry group, chain-volume series expressed in 1995/96 prices
- 2.2 Gross domestic product by industry, seasonally adjusted chain-volume series expressed in 1995/96 prices
- 2.3 Gross domestic product by industry, seasonally adjusted chain-volume series expressed in 1995/96 prices, percentage change from previous quarter
- 2.4 Gross domestic product by broad industry group, seasonally adjusted chain-volume series expressed in 1995/96 prices, values and percentage change from same quarter of previous year
- 2.5 Gross domestic product by industry, seasonally adjusted chain-volume series expressed in 1995/96 prices, percentage change from same quarter of previous year
- 2.6 Gross domestic product by industry, actual chain-volume series expressed in 1995/96 prices
- 2.7 Gross domestic product by industry, actual chain-volume series expressed in 1995/96 prices, percentage change in annual values
- 3.1 Expenditure on gross domestic product, seasonally adjusted chain-volume series expressed in 1995/96 prices
- 3.2 Expenditure on gross domestic product, seasonally adjusted chain-volume series expressed in 1995/96 prices, percentage change from previous quarter
- 3.3 Expenditure on gross domestic product, seasonally adjusted chain-volume series expressed in 1995/96 prices, percentage change from same quarter of previous year
- 3.4 Expenditure on gross domestic product, actual chain-volume series expressed in 1995/96 prices
- 3.5 Expenditure on gross domestic product, actual chain-volume series expressed in 1995/96 prices, percentage change in annual values
- 4.1 Expenditure on gross domestic product, seasonally adjusted current prices
- 4.2 Expenditure on gross domestic product, actual current prices
- 5.1 Index of implicit price deflators, 1995/96 = 1000
- 5.2 Index of implicit price deflators, 1995/96 = 1000, seasonally adjusted series percentage change from previous quarter
- 5.3 Index of implicit price deflators, 1995/96 = 1000, percentage change in annual values
- 6.1 Summary statistics
- 6.2 Summary statistics, percentage change in annual values

## Access more data on Infoshare and Table Builder

Use [Infoshare](#), a free, online database to access time-series data specific to your needs. To access the release time series on Infoshare, select the following categories from the homepage:

Subject category: **Economic Indicator**  
Group: **National Accounts – SNA 1993 – SNC**