

Gross Domestic Product: September 2013 quarter

Embargoed until 10:45am – 19 December 2013

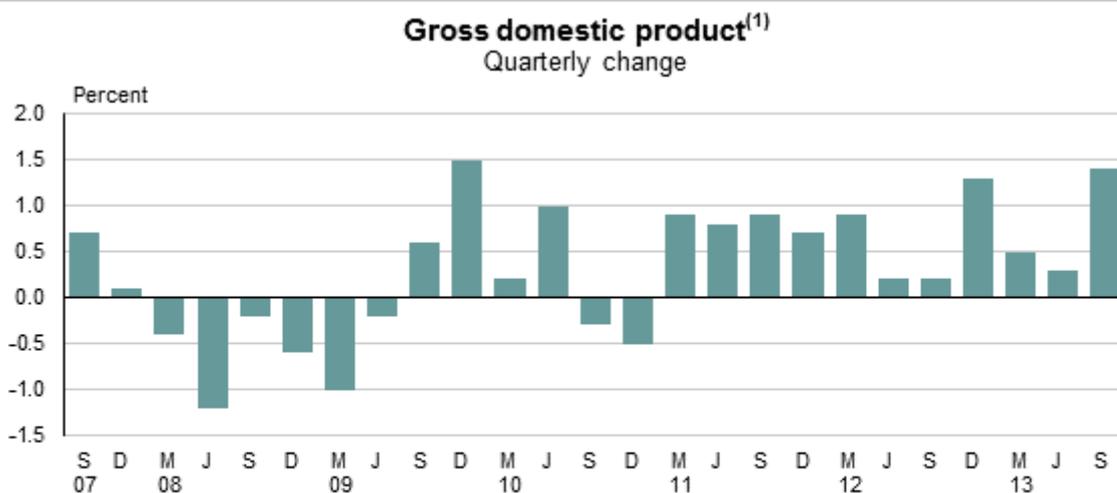
Key facts

Gross domestic product (GDP):

- Economic activity increased 1.4 percent in the September 2013 quarter.
- Agriculture (up 17.0 percent) driven by increased dairy production was the main contributor to the growth.
- Construction (down 1.0 percent) and business services (down 0.8 percent) partly offset the growth.
- Economic activity for the year ended September 2013 was up 2.6 percent.

Expenditure on gross domestic product:

- The expenditure measure of GDP was up 1.1 percent in the September 2013 quarter.
- Gross fixed capital formation increased 3.1 percent, while inventories were built-up by \$770 million
- Imports of goods and services increased 4.5 percent, driven by a rise in imports of machinery and plant.
- For the year ended September 2013, expenditure on GDP was up 2.7 percent.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

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Commentary

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- Government final consumption expenditure rises
- Fall in net exports
- Implicit price deflators
- Real gross national disposable income up for the year

New Zealand economy grows 1.4 percent

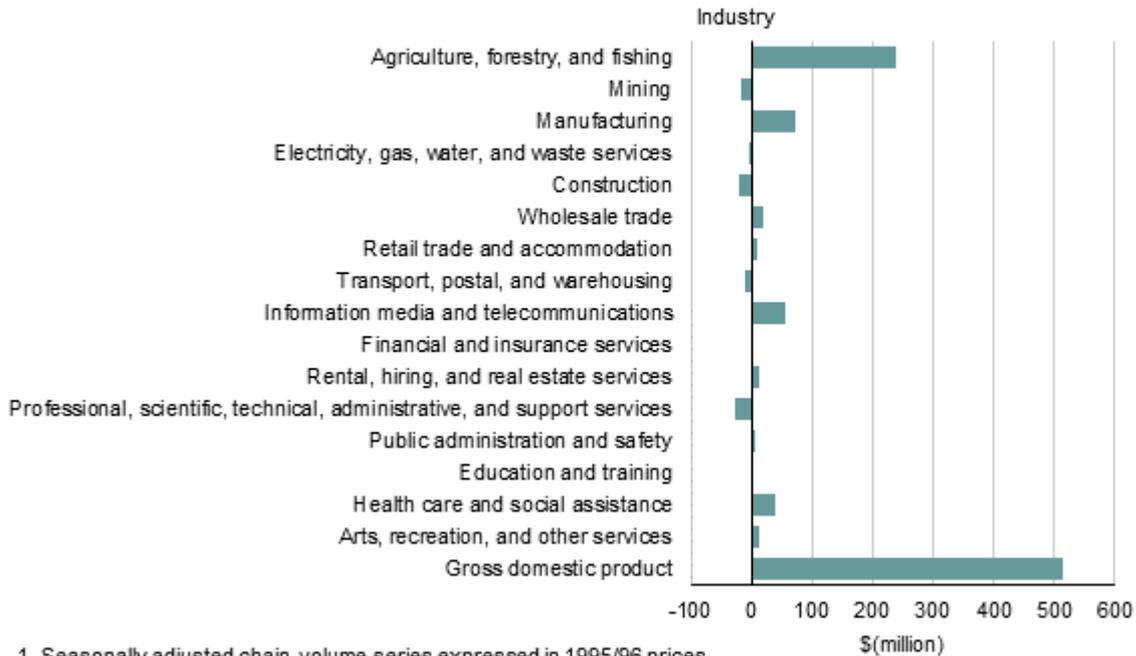
Gross domestic product (GDP) rose 1.4 percent in the September 2013 quarter, after a revised 0.3 percent increase in the June 2013 quarter.

The main movements by industry were:

- agriculture – up 17.0 percent as dairy production increased after two quarters of drought-affected declines
- manufacturing – up 1.5 percent due to metal product manufacturing (up 6.6 percent) and food, beverage, and tobacco product manufacturing (up 1.3 percent)
- business services – down 0.8 percent mainly due to lower activity for employment and administrative services, partly offset by higher activity for architectural and engineering services
- construction – down 1.0 percent with falls in infrastructure and non-residential building construction offsetting an increase in residential building construction.

Gross domestic product by industry⁽¹⁾

Change from previous quarter
September 2013 quarter



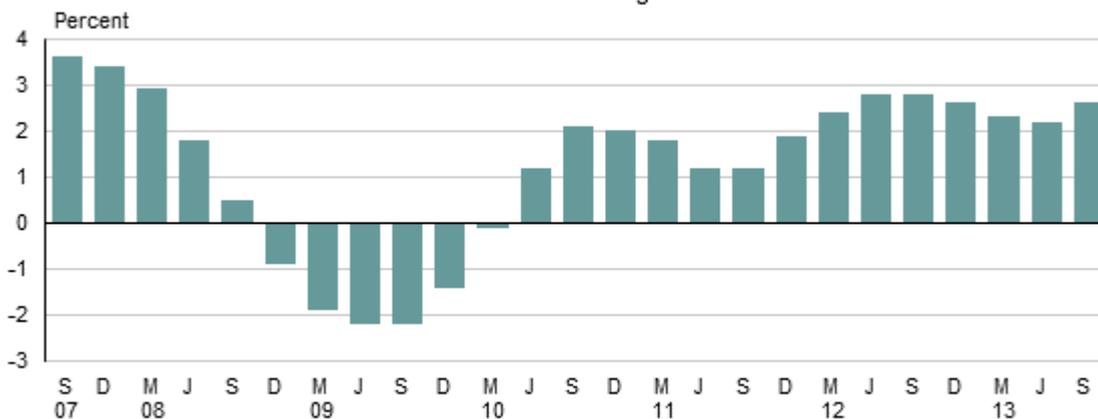
1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Economic activity for the year ended September 2013 was up 2.6 percent compared with the September 2012 year.

Gross domestic product⁽¹⁾

Annual change



1. Actual chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

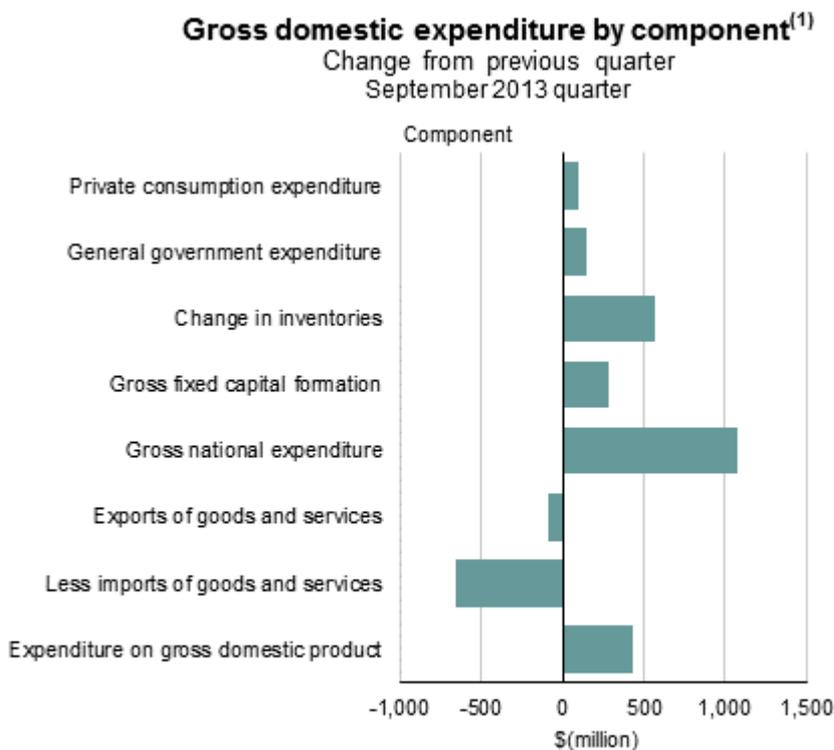
Activity in the September 2013 quarter was 3.5 percent higher than in the September 2012 quarter.

Expenditure on GDP – main movements

The expenditure measure of GDP (GDE) rose 1.1 percent in the September 2013 quarter. The expenditure and production measure 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 these goods and services were used.

The main movements in GDE in the September 2013 quarter were:

- household consumption expenditure – up 0.4 percent, due to increased spending on durable goods such as furniture and motor vehicles
- gross fixed capital formation – up 3.1 percent, driven by increased investment in plant, machinery, and equipment and higher investment in residential buildings
- inventories increased by \$770 million, with a build-up in manufacturing and distribution stocks
- exports of goods and services – down 0.7 percent, with a fall in exports of both meat and dairy products
- imports of goods and services – up 4.5 percent, the third consecutive quarterly rise, which was led by more imports of capital and intermediate goods.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

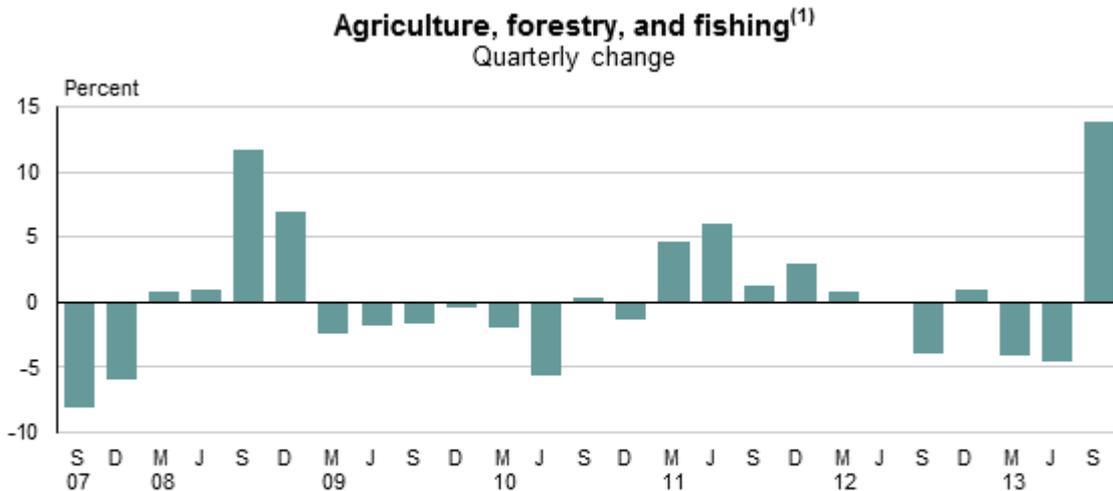
GDE for the September 2013 year rose 2.7 percent when compared with the September 2012 year.

Primary industries largest contributor to economic growth

Primary industries grew 9.6 percent in the September 2013 quarter. Agriculture, and forestry and logging were the main drivers.

Dairy recovery boosts agriculture

Agriculture, forestry, and fishing activity increased 13.9 percent in the September 2013 quarter, driven by increased agricultural activity.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Agricultural activity increased 17.0 percent in the September 2013 quarter. Dairy was the biggest contributor to this increase, followed by sheep and cattle farming.

Dairy production increased strongly in the September 2013 quarter. The impact of the drought on agricultural output, especially for dairy, appears to have been relatively short-lived. The recovery from the drought has been similar to that of the last drought in 2008, where dairy output fell significantly in the March and June quarters but recovered to pre-drought levels in the September quarter. The increase in dairy production this quarter led to an increase in dairy product manufacturing.

The full impact of the drought and recovery will be shown when more detailed annual benchmark information is incorporated in December 2014. This data will provide information on any changes in quantity of inputs dairy farmers use, like feed and fertiliser.

Forestry and logging reach new highs

Forestry and logging was up 8.2 percent in the September 2013 quarter. Activity in this industry is now at its highest level, surpassing its previous peak in December 2012. The latest rise reflected an increase in forestry exports. Annual forestry activity is up 8.0 percent in the September 2013 year.

Mining down

Mining was down 4.8 percent in the September 2013 quarter. This fall was driven by coal mining and oil and gas extraction. Despite the fall, annual mining activity was up 2.4 percent in the September 2013 year.

Primary industries down for the year

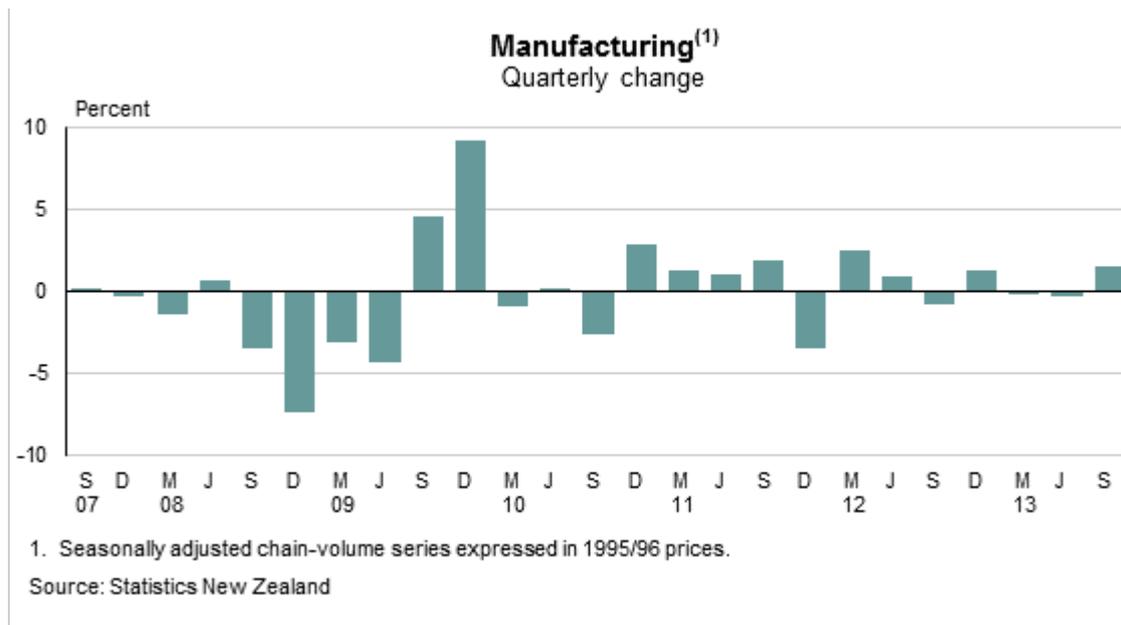
Primary industries fell 2.5 percent in the September 2013 year. A decline in agriculture activity (down 5.6 percent), despite the latest quarterly rise, was the main driver of the fall.

Manufacturing keeps goods-producing industries up

Goods-producing industries grew 0.4 percent in the September 2013 quarter, led by manufacturing (up 1.5 percent). This was partly offset by declines in construction (down 1.0 percent) and electricity, gas, water, and waste services (down 0.3 percent).

Drought recovery leads to growth in manufacturing

Manufacturing grew 1.5 percent in the September 2013 quarter. Food, beverage, and tobacco product manufacturing (up 1.3 percent) contributed to the rise, with both dairy product and meat product manufacturing increasing. The rise this quarter is consistent with the increase in agricultural output. Exports of dairy products were down this quarter, suggesting extra production is being held in inventories. This is shown in an increase in manufacturing inventories this quarter.

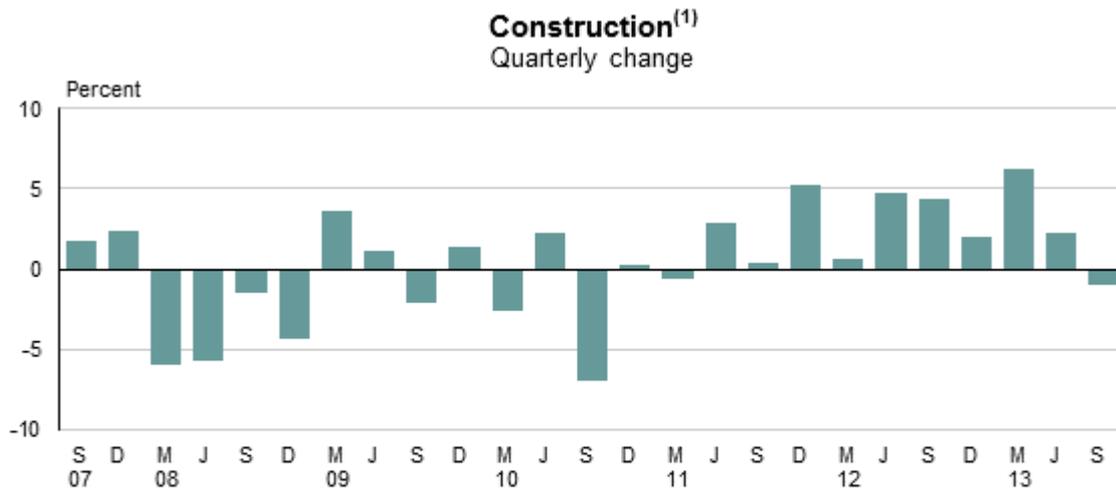


Metal product manufacturing increased 6.6 percent in the September 2013 quarter, while wood and paper products manufacturing increased 4.0 percent (the largest increase since the September 2009 quarter).

Overall, manufacturing was up 1.8 percent in the September 2013 year.

Construction down for first time in two years

Construction activity fell 1.0 percent in the September 2013 quarter, the first quarterly fall since March 2011. The decrease was driven by heavy and civil engineering construction and non-residential building activity, but was partly offset by increases in residential building activity and construction services.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Heavy and civil engineering construction, which includes roading and infrastructure, had the biggest decrease this quarter, after three quarters of significant increases. Reflecting this fall was a large decline in investment in other construction, as measured in gross fixed capital formation.

Non-residential building construction also fell. Value of Building Work Put in Place: September 2013 quarter reported non-residential building activity increased in Canterbury but fell over the rest of New Zealand, leading to a net decrease overall.

Residential building construction increased this quarter, offsetting some of the falls in non-residential building and infrastructure construction. Investment in residential buildings also rose this quarter, in both Canterbury and the rest of New Zealand.

In this release we incorporated new annual balanced data up to March 2011. We also improved how we measure construction activity by incorporating Annual Enterprise Survey (AES) data one year earlier than usual to capture the impact of the Canterbury rebuild in a timelier manner. This new method resulted in significant upward revisions to construction activity. See the Revisions section of this release for more information.

In the September 2013 year, construction activity increased 13.8 percent. The level of activity over this period is construction's highest annual level ever recorded.

Goods-producing industries up for the year

Overall, goods-producing industries were up 4.6 percent in the September 2013 year. This was driven by increases in construction and manufacturing, but was partly offset by a decline in electricity, gas, water, and waste services.

Service industries continue to grow

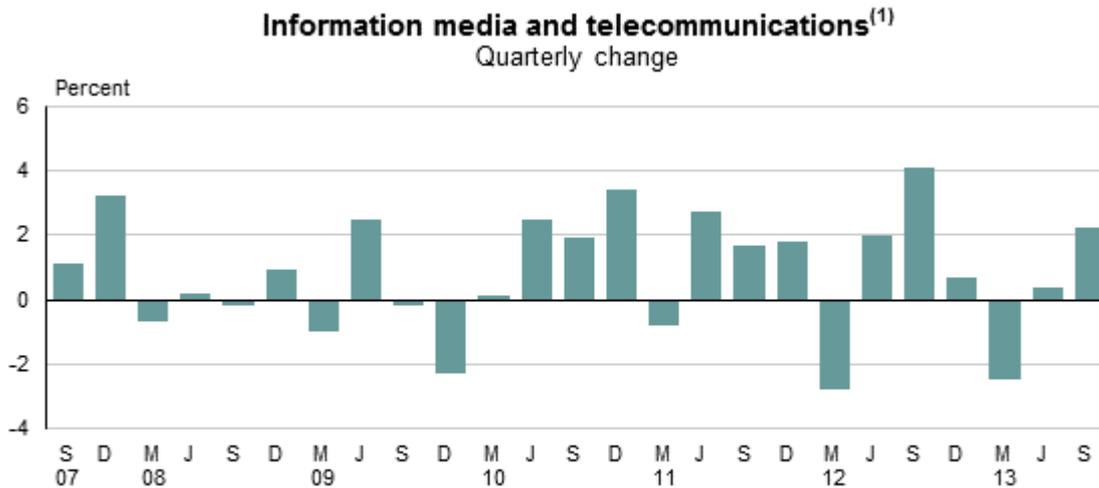
The service industries grew 0.4 percent in the September 2013 quarter, with nine of the 11 service industries increasing. The largest contributions came from health care and social assistance, and information media and telecommunications. This is the 11th consecutive quarter of growth for the service industries.

Health care and social assistance grows

Health care and social assistance increased 2.0 percent in the September 2013 quarter, driven by private sector activity for aged care and social assistance services. The rise this quarter is the largest since June 2006.

Information media and telecommunications up

Information media and telecommunications increased 2.2 percent in the September 2013 quarter, due to an increase in telecommunications activity.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

To better capture the contribution to economic growth of this rapidly changing industry, we developed a new method and implemented this from 2010 onwards. This has resulted in an increase in growth rates for the industry. See the [Revisions](#) section of this release for more information.

Retail trade and accommodation up

The retail trade and accommodation industry grew 0.3 percent in the September 2013 quarter. This was driven by an increase in retail trade (up 1.0 percent) but was partly offset by a fall in accommodation and food services (down 1.0 percent).



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

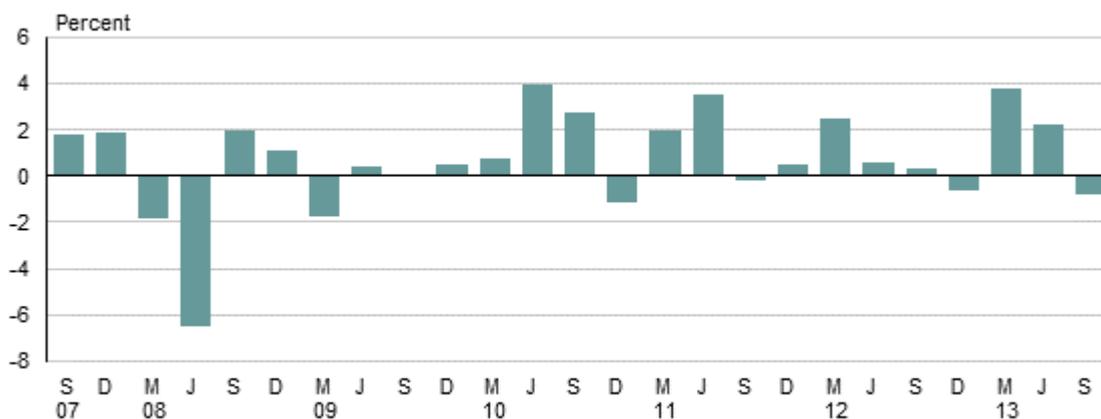
Source: Statistics New Zealand

The increase in retail trade was driven by rises in furniture, electrical, and hardware retailing, and motor vehicle and parts retailing. The fall in accommodation, restaurants, and bars follows three consecutive quarters of increase.

Business services fall

Professional, scientific, technical, administrative, and support services fell 0.8 percent in the September 2013 quarter. This is the largest fall since December 2010, and comes after two quarters of strong growth. The fall this quarter was driven by a decline in administrative and support services. This was partly offset by an increase in architectural and engineering services, the only sub-industry to increase.

Professional, scientific, technical, administrative, and support services⁽¹⁾ Quarterly change



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Service industries up for the year

Service industries grew 2.6 percent in the September 2013 year. This was largely due to an increase in professional, scientific, technical, administrative, and support services (up 4.3 percent), but all service industries rose during this period.

Expenditure on GDP up 1.1 percent

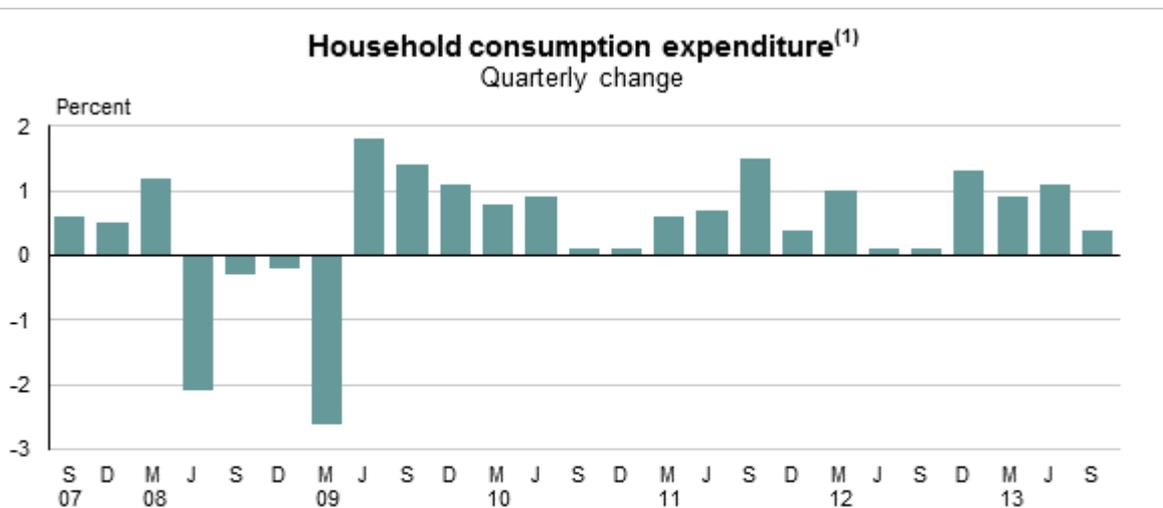
The expenditure measure of GDP (GDE) increased 1.1 percent in the September 2013 quarter, after a revised 0.2 percent increase in the June 2013 quarter.

GDE increased 2.7 percent in the September 2013 year.

While the production-based and the expenditure-based measures are both official series, the production-based measure historically shows less volatility and is the preferred series for the quarter-on-quarter changes. The expenditure-based measure uses a different range of data sources and is more susceptible to timing and valuation changes in the short-term.

Households spending more on durable goods

Household final consumption expenditure (HCE) increased 0.4 percent in the September 2013 quarter, compared with an increase of 1.1 percent in the June 2013 quarter. Within household consumption expenditure, spending on durable goods and services was up, while spending on non-durables was down. Household consumption expenditure measures the volume of spending on goods and services by New Zealand-resident households.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

The volume of spending on durable goods rose 1.4 percent in the September 2013 quarter, compared with a 3.7 percent rise in the June 2013 quarter. The latest rise was due to increasing spending on furniture and motor vehicles. This is reflected in retail trade activity in the production measure of GDP. Imports of passenger motor vehicles were also up this quarter. Household spending on durable goods has risen in 10 of the past 11 quarters.

Household spending on services increased 0.7 percent in the September 2013 quarter, after a 0.7 percent increase in the June 2013 quarter. The increase this quarter was driven by spending on gambling and housing.

The volume of spending on non-durable goods decreased 0.3 percent in the September 2013 quarter, compared with a 0.2 percent decrease in the June 2013 quarter. The fall this quarter was due to lower spending on fuel and electricity.

Spending by overseas visitors in New Zealand was up this quarter (2.0 percent), while New Zealand residents overseas increased their volume of spending by 1.3 percent.

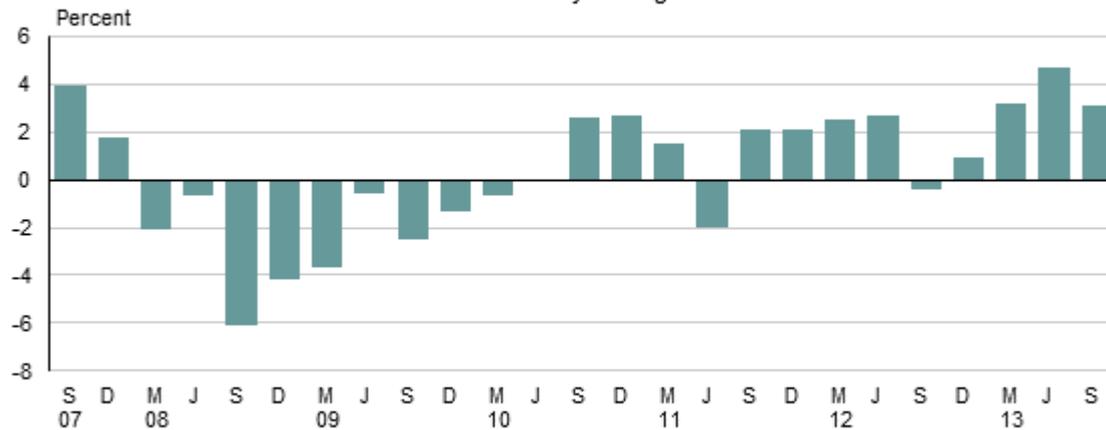
Household spending up for the year

For the September 2013 year, HCE increased 3.0 percent compared with the September 2012 year. The increase was due to increased spending on durables (up 6.0 percent), non-durables (up 0.9 percent), and services (up 3.2 percent).

Investment driven by plant, machinery, and equipment

Gross fixed capital formation (GFKF) increased 3.1 percent in the September 2013 quarter, after an increase of 4.7 percent in the June 2013 quarter.

Gross fixed capital formation⁽¹⁾ Quarterly change



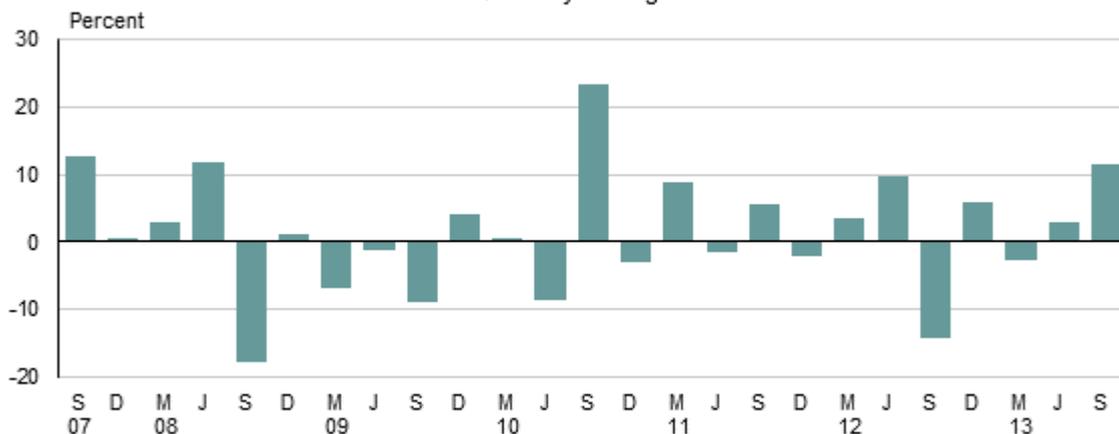
1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Business investment in fixed assets, which is total GFCF excluding residential building, increased 0.9 percent in the September 2013 quarter, following a strong increase of 6.7 percent in the June 2013 quarter.

The main driver of the increase this quarter was investment in plant, machinery, and equipment (up 11.6 percent), after a 3.0 percent increase in the June 2013 quarter. This is the largest quarterly increase since the September 2010 quarter, when it grew 23.4 percent. Investment in plant, machinery, and equipment is now at its highest level since the series began. Imports of machinery and plant also increased in the September 2013 quarter.

Gross fixed capital formation – plant, machinery, and equipment⁽¹⁾ Quarterly change



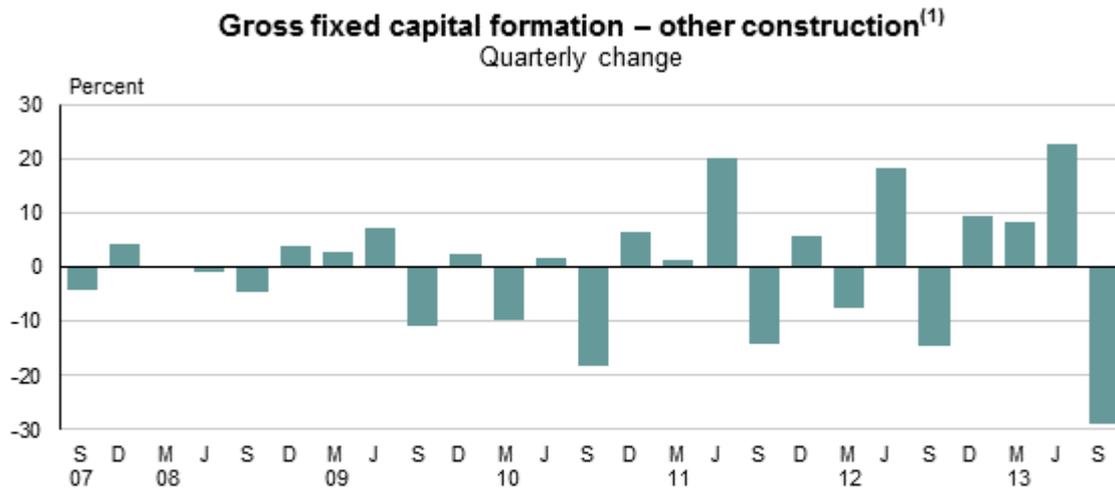
1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Other contributors to this quarter's increase were investment in:

- intangible fixed assets (eg computer software) – up 10.2 percent
- transport equipment – up 11.9 percent.

Partly offsetting the increase this quarter was investment in other construction (down 29.0 percent), which had the largest quarterly fall since the June 1992 quarter. Investment declined across a range of different infrastructure projects this quarter, resulting in the latest fall. In the production measure of GDP, heavy and civil engineering construction activity decreased this quarter. Non-residential building activity (down 6.0 percent) also fell this quarter.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

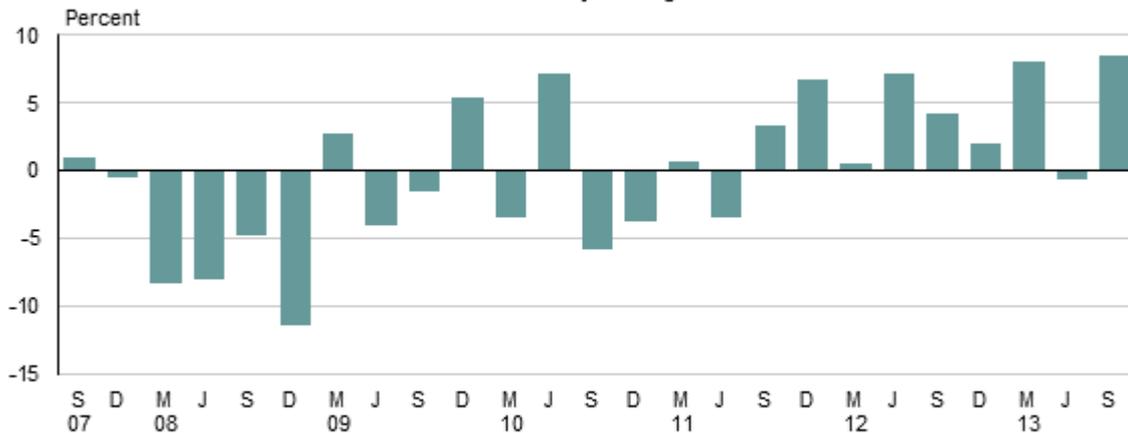
Business investment increased 5.3 percent in the September 2013 year.

Residential building investment continues to rise

Investment in residential building (up 8.5 percent) partly contributed to the increase in GFKF this quarter. This is the largest quarterly increase in residential building investment since the September 2002 quarter, when it grew 12.7 percent. The level of residential building investment is the highest since the December 2007 quarter. [Value of Building Work Put in Place: September 2013 quarter](#) reported an 8.1 percent increase in residential building activity. Residential building activity on the production approach of GDP is also up this quarter.

Gross fixed capital formation – residential building⁽¹⁾

Quarterly change



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

For the September 2013 year, residential building investment increased 17.6 percent.

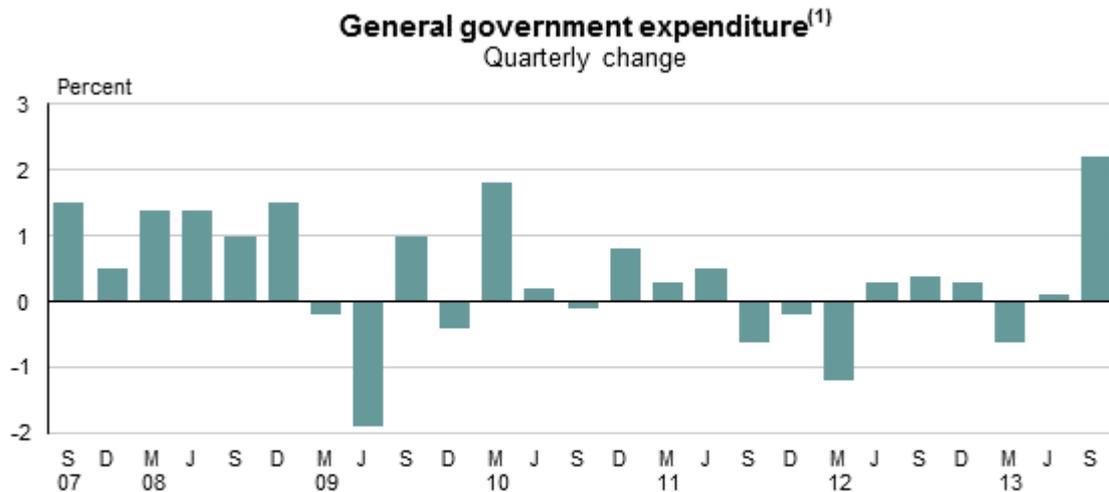
Large build-up in manufacturing and distribution inventories

In the September 2013 quarter, the supply of goods exceeded demand leading to a \$770 million build-up in inventories. This is the largest build-up in inventories since the series began.

The strong increase this quarter follows a build-up of \$195 million in the June 2013 quarter, and was driven by increases in manufacturing and distribution inventories. The build-up in manufacturing inventories was due to dairy manufacturing, and the distribution build-up was due to retail and wholesale stocks. Exports of dairy products fell this quarter, while production was up.

Government final consumption expenditure rises

General government final consumption expenditure increased 2.2 percent in the September 2013 quarter, following an increase of 0.1 percent in the June 2013 quarter. In the latest quarter, central government expenditure was up 2.4 percent and local government was up 1.1 percent.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Annual general government expenditure up

For the September 2013 year, general government final consumption expenditure increased 0.5 percent.

Fall in net exports

Exports of goods and services down

Export volumes of goods and services fell 0.7 percent in the September 2013 quarter, after a 3.8 percent decrease in the June 2013 quarter.

The volume of goods exported fell 0.5 percent in the September 2013 quarter, after a 6.2 decrease in the June 2013 quarter.

The main drivers of the latest decrease were:

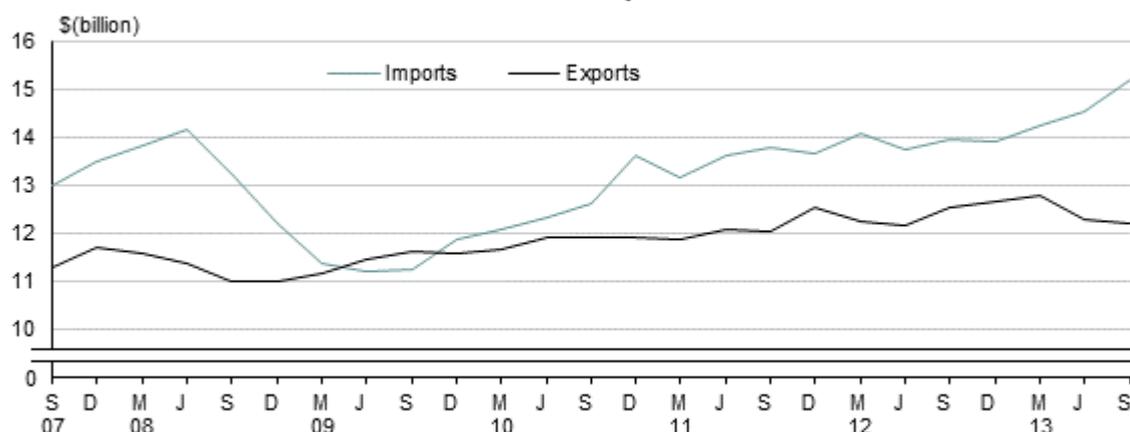
- agriculture and fishing primary products (down 10.6 percent)
- dairy products (down 3.9 percent)
- coal, crude petroleum and ores, minerals, and gases (down 13.3 percent).

Partly offsetting the decrease this quarter were increases in:

- other food, beverages, and tobacco (up 5.4 percent)
- forestry primary products (up 5.3 percent)
- metal products, machinery, and equipment (up 1.8 percent).

Exports of services decreased 1.4 percent in the September 2013 quarter after a 2.8 percent increase in the June 2013 quarter. In the latest quarter, exports of travel services were up 3.5 percent.

Imports and exports of goods and services⁽¹⁾ Quarterly



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Imports of goods and services up due to machinery and plant

The volume of goods and services imported increased 4.5 percent in the September 2013 quarter, after a 2.1 percent increase in the June 2013 quarter.

The volume of goods imported increased 5.4 percent in the September 2013 quarter, after a 2.6 percent increase in the June 2013 quarter. The main contributors to the increase were capital goods imported (up 13.9 percent), driven by machinery and plant (up 11.4 percent). This strong increase in imports of machinery and plant was reflected in investment in plant, machinery, and equipment.

Also contributing to the increase were:

- intermediate goods (up 3.5 percent)
- consumption goods (up 2.1 percent)
- passenger motor cars (up 5.3 percent).

The volume of services imported was up 2.0 percent in the September 2013 quarter, after a 1.9 percent increase in the June 2013 quarter. The latest increase was partly driven by imports of travel services (up 1.7 percent).

Export and import volumes both up for the year

For the September 2013 year, export volumes increased 1.0 percent, driven mainly by meat products (up 11.7 percent). Over the same period, import volumes increased 4.6 percent, driven mainly by imports of machinery and plant (up 10.5 percent).

Implicit price deflators

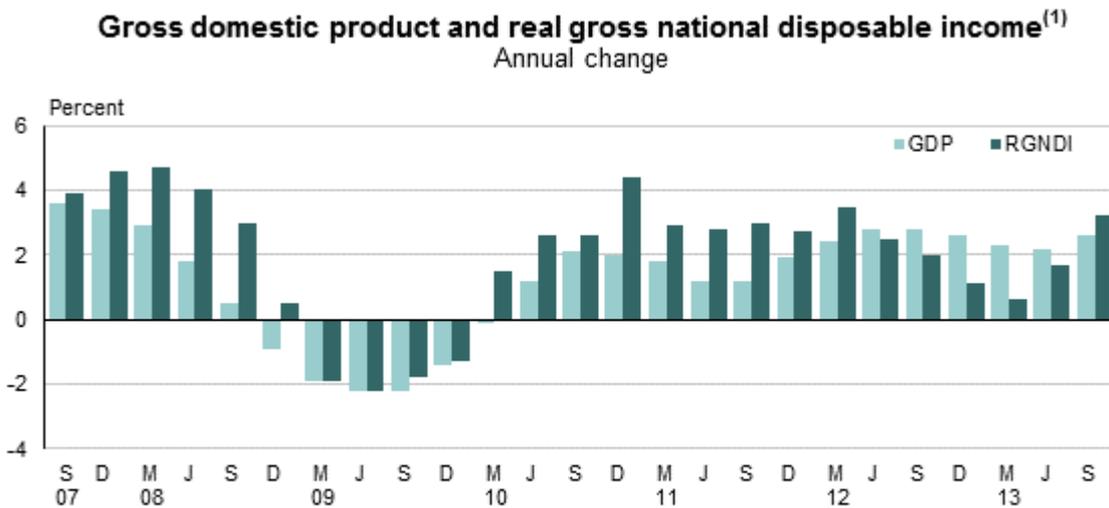
The GDP implicit price deflator (IPD) for the September 2013 year increased 0.2 percent. The GDP IPD is a broad measure of the overall price change for final goods and services produced in New Zealand.

The IPD for gross national expenditure increased 0.1 percent for the September 2013 year. This provides a broad measure of the overall price change for final goods and services purchased in New Zealand.

The consumers price index (CPI) increased 1.4 percent for the year ended September 2013 (see [Consumers Price Index: September 2013 quarter](#)). The CPI measures the rate of price change of goods and services purchased by households.

Real gross national disposable income up for the year

Real gross national disposable income (RGNDI) increased 2.9 percent in the September 2013 quarter. The merchandise terms of trade index increased 7.5 percent in the September 2013 quarter, and increased 16 percent for the September 2013 year (see [Overseas Trade Indexes \(Prices\): September 2013 quarter \(provisional\)](#)). The increase in the terms of trade for the year ended September 2013 resulted in RGNDI growth higher than GDP growth.



1. Actual chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

RGNDI increased 3.2 percent for the September 2013 year, compared with an increase in GDP of 2.6 percent over the same period. 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. For more information about RGNDI see [Definitions](#).

For more detailed data see the Excel tables in the 'Downloads' box.

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 3, 4, 5, 6, 25, and 26 industry groups are combined to form the following broad groupings, based on the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06):

- primary industries (agriculture, forestry, and fishing; mining)
- goods-producing industries (manufacturing; electricity, gas, water, and waste services; construction)
- service industries (wholesale trade; retail, accommodation, and restaurants; transport, storage and warehousing; finance and insurance services; rental, hiring, and real estate services; professional, scientific, technical, administration, and support services; public administration and safety; education and training; health care and social assistance; arts, recreation and other services).

As well as these industrial groupings, there is an 'unallocated' category. This category includes taxes on production and imports (import duties, GST, and taxes on capital transactions) that are not allocated to industries.

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. This is the best estimate 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, see '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: Tables 23 and 24 contain 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.

Low-value imports: are imports of goods purchased directly by New Zealand households which have a value of less than \$1,000. These are estimated separately as they are not captured in the administrative data used to measure imports of goods.

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 2013 quarter will be released on 20 March 2014.

[Subscribe to information releases](#), including this one, by completing the online subscription form.

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

Recent releases

The quarterly production measure of GDP has been reconciled to balanced annuals data from [National Accounts \(Industry Benchmarks\): Year ended March 2011](#). For more information about the reconciliation process, see [Revisions](#).

The quarterly expenditure measure of GDP has been reconciled to annual data from National Accounts [\(Income and Expenditure\): Year ended March 2013](#).

[Revisions to New Zealand's macroeconomic accounts to December 2013](#) informs users of New Zealand's macroeconomic statistics about data changes included in the international and national accounts for 2013.

[Improvements to GDP in December 2013](#) informs users of GDP about data changes included in this release.

Past releases

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

Related information

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

Data quality

Period-specific information

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

- [Reference period](#)
- [Revisions to New Zealand's macroeconomic accounts to December 2013](#)
- [Improvements to GDP in December 2013](#)

General information

This section contains information that does not change between releases.

- [Data source](#)
- [Incorporating annual data](#)
- [The System of National Accounts](#)
- [Australian and New Zealand Standard Industrial Classification 2006](#)
- [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](#)
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Period-specific information

Reference period

Information for this release was collected for the period July–September 2013.

Revisions to New Zealand's macroeconomic accounts to December 2013

See [Revisions to New Zealand's macroeconomic accounts to December 2013](#) for details on data changes included in the international and national accounts for 2013.

Improvements to GDP in December 2013

See [Improvements to GDP in December 2013](#) for details on data changes included in this release.

General information

Data source

[Quarterly Gross Domestic Product: Sources and Methods \(Third edition\)](#) presents the sources and methods used in compiling quarterly GDP.

Incorporating annual data

National Accounts (Industry Benchmarks): Year ended March 2011 was released on 21 November 2013. As annual data has a wider range of data sources, it is more complete. We reconciled the quarterly estimates of industries in GDP and the components of gross domestic expenditure (GDE) to annual estimates to ensure we show the most robust picture of economic activity.

We incorporated annual benchmarks for the production measure of GDP up to the year ended March 2011, and to the year ended March 2013 for GDE.

See National Accounts (Income and Expenditure): Year ended March 2013 for more information.

The System of National Accounts

The conceptual framework we use to compile 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 SNA is for 2008 (SNA08). New Zealand will introduce SNA08 into the New Zealand accounts at the end of 2014.

Australian and New Zealand Standard Industrial Classification 2006

The production measure of GDP is presented by industry. The industry classification we use for GDP is the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06).

See ANZSIC 2006 – industry classification for more information about implementing ANZSIC06.

Gross Domestic Product: December 2011 quarter was the last GDP release to use ANZSIC96.

Constructing a chain-volume series

We constructed the chain-volume measures of GDP and GDE by:

(a) compiling a Laspeyres volume index of the component in question, using the previous year's prices as weights; 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, postal, and warehousing, 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 many components. Chaining is not adopted, either because the details needed for annual weights are not available, or relative price changes are not significant.

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). See Chain volume measures in national

accounts for a full explanation of the concepts and procedures used to compile chain-volume series.

Usually, 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 on an annual basis is currently used for these industries: agriculture; electricity and water transport; owner-occupied dwellings; healthcare and social assistance; education and training; professional, scientific, and technical services; administration and support services; arts and recreation services; and other services.

Revisions resulting from chain-linking

One of the key benefits of 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. 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. See 'Incorporating annual data' section 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 were used for the production-based series is for the year ended 31 March 2011, and all subsequent quarters use these weights.

Current price data for GDE components are timelier. As a result, the latest year for which up-to-date weights were used for the GDE series is for the year ended 31 March 2013. All subsequent quarters use these weights.

When the weights are updated, this procedure results in revisions to all periods beyond the latest year for which detailed series are available (currently 2010/11 for the production-based measure and 2012/13 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, we used 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. Before March 1991, we used the 'de facto' population, which excludes New Zealand residents temporarily overseas and includes overseas tourists in New Zealand.

Calculating implicit price deflators

We calculate implicit price deflators (IPDs) by dividing the seasonally adjusted current price quarterly series by the equivalent chain-volume series. This provides a broad estimate of price change between the base period and any other period. Significant compositional changes may result in the IPDs being a less precise estimate of price change. This problem is more likely to occur in the gross national expenditure and expenditure on GDP aggregates. This is because both measures include the change in inventories item, which is highly subject to compositional changes, including a change in sign.

Revisions policy

We may revise previously published series each quarter. The frequency and cause of these revisions are listed below.

- **Quarterly** – more 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 macroeconomic statistics.
- **Annual** – introduction of annual data after the release of the latest annual national accounts; 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. 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.

Each of the above causes for revision, and/or the addition of a new point in the actual quarterly series, can alter seasonal factors and 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 the measures used are correctly understood. Annual measures are calculated by summing the actual series for a four-

quarter period. Unless otherwise stated, the annual percentage change is the most recent four-quarter period compared with the previous four-quarter period.

Direct and indirect seasonal adjustment

The level at which a series is seasonally adjusted is important, since it has the potential to affect its quality. 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 like 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 relevant for New Zealand, where seasonal fluctuations in the primary industries affect economic series.

We analysed both direct and indirect approaches for the two quarterly GDP aggregates, the production and expenditure on GDP. We prefer to use the direct approach 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. The balancing item will often show significant seasonal variations. This is 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.

Explanation of the seasonally adjusted balancing item

Seasonal adjustment removes seasonal variation from a statistical series. By removing seasonal effects from GDP, we can better understand the underlying economic activity. Examples of seasonal variation in economic activity are milking and lambing seasons, Christmas shopping, and peak periods for visitors to New Zealand.

The seasonal adjustment balancing item is the difference between directly seasonally adjusting total GDP and seasonally adjusting each component of GDP and adding them together. Directly seasonally adjusting total GDP is the preferred method. The seasonal adjustment balancing item does not contribute to GDP and therefore should not be interpreted as an economic variable. It should also not be interpreted as a margin of error for the headline measure of GDP, as over the course of a year it balances out to zero.

We seasonally adjust quarterly GDP in line with international best practice.

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

See more [information about the quarterly gross domestic product](#).

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Revisions

- [Overview](#)
- [Quarterly series reconciled to new annual balanced data](#)
- [New method for calculating information media and telecommunications](#)
- [Better measuring the Canterbury rebuild](#)
- [Ownership of owner-occupied dwellings – use of financial services](#)
- [Spending by international visitors to New Zealand](#)
- [Imports of low-value goods purchased directly by households](#)
- [Household consumption expenditure commodity split](#)
- [Business investment methods](#)
- [Inventories methods](#)
- [Chaining non-profit institutions serving households](#)
- [Other revisions](#)

Overview

A number of revisions have been incorporated in this release. Improvements to [gross domestic product in December 2013](#) published in November provides more information on the revisions and the changes that were made this quarter.

The graphs below show the total impact of the revisions to both GDP and expenditure on GDP.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Gross domestic product – expenditure measure⁽¹⁾ Quarterly



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

We discuss the key revisions in the sections that follow.

Quarterly series reconciled to new annual balanced data

Reconciling quarterly constant price series to balanced annual series is an integral process in compiling national accounts. This process is undertaken in the September quarter of each year, and incorporates data from the annual national accounts releases. Incorporating this data helps maintain the quality of the quarterly series over time.

The new annual data incorporated into this release come from National Accounts (Industry Benchmarks): Year ended March 2011 (published on 21 November 2013) and National Accounts (Income and Expenditure): Year ended March 2013 (published on 28 November 2013).

Not all industries are reconciled to the annual national accounts data. The methods used to calculate the annual contribution to GDP by industry varies, with some industries using only some of the annual national accounts data, while some use other data sources entirely. More information on the methods used for calculating each industry of GDP, and component of the expenditure measure of GDP can be found in Quarterly gross domestic product: Sources and methods (third edition). However, all industries and components are affected by an update in the weights used for chain-linking, which allows for the relative size of each lower-level series to be reflected in the industry and component aggregates.

We decided not to fully incorporate annual benchmarks for several industries this quarter. The annual current price data for these industries had been adjusted for consistency with new survey information, but this produced volume results that require further investigation to reconcile the different data sources. Instead, we kept the existing benchmarks for the March 2010 year (which were incorporated last December) and applied the resulting 2011 volume movement from National Accounts (Industry Benchmarks): Year ended March 2011. The methods used beyond 2011 are unaffected by this change.

The following industries were affected:

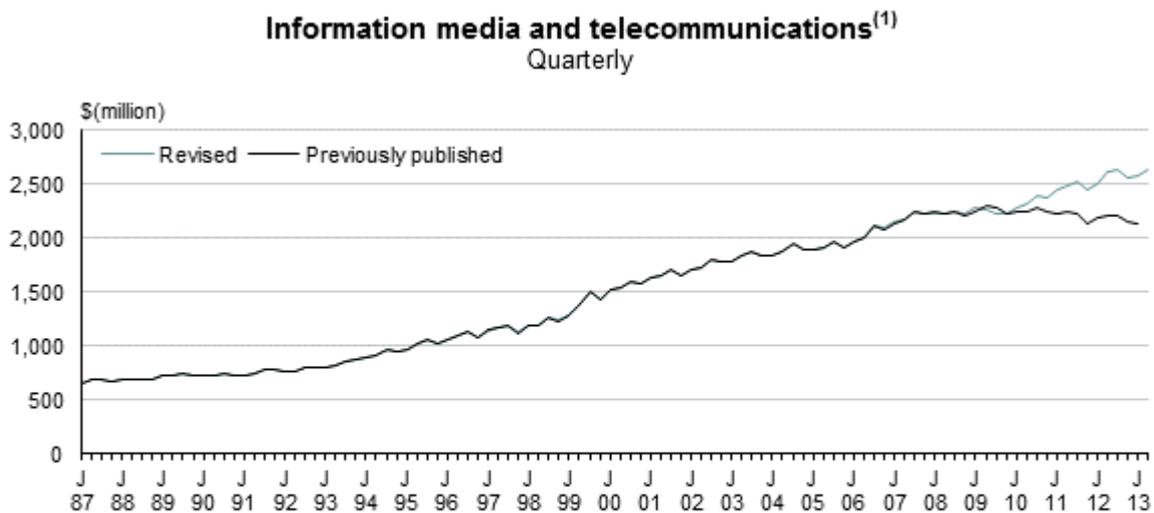
- scientific, architectural and engineering services
- legal and accounting services
- employment and other administrative services

We plan to do further analysis to reconcile the different data sources, so that benchmarks for these industries can be fully incorporated next year.

New method for calculating information media and telecommunications

We implemented a new method for calculating economic activity in the information media and telecommunications industry. The new annual method uses output and intermediate consumption from National Accounts (Industry Benchmarks), deflated by the appropriate producers price indexes (PPI) to calculate the industry's annual contribution to economic activity. The new quarterly method uses sales of goods and services, which are sourced from GST data and deflated by the PPI as the indicator of economic activity.

The new method was implemented from June 2009 quarter onwards and affects both GDP and expenditure on GDP.



1. Non-seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Better measuring the Canterbury rebuild

We improved the way we measure construction activity to provide more accurate and timely measurement of the Canterbury rebuild's effect on the New Zealand economy. Under the previous method, there was a delay of around three years before the most detailed annual data flows through to quarterly GDP from the National Accounts (Industry Benchmarks) release. The new method involves incorporating data from the Annual Enterprise Survey (AES) one year earlier, reducing the delay to about two years and therefore showing the effect of the Canterbury

rebuild in a timelier manner. Using the data early could mean that it's revised when incorporated from the industry benchmarks release the next year, but we don't anticipate that these revisions will be large

The new method has increased the growth rate of the construction industry in the March 2012 year from -8.1 percent to 3.8 percent. On the expenditure measure of GDP, there has been an \$800 million increase in investment in residential buildings for 2012 (in current prices).



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Ownership of owner-occupied dwellings – use of financial services

In this release we resolved an issue which occurred when implementing the financial intermediation services indirectly measured (FISIM) in the owner-occupied dwellings industry. This has resulted in downward revisions to this industry from 1978 to 1995 and has also caused a reduction in GDP over the same period.

Spending by international visitors to New Zealand

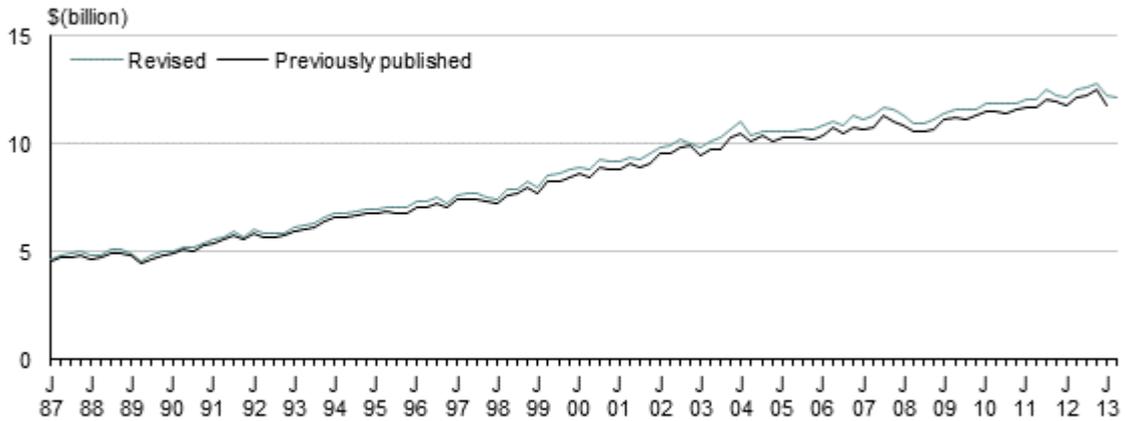
We have improved our methodologies for estimating expenditure by international visitors to New Zealand.

The changes are:

- moving the International Visitors Survey (IVS) to an online collection from a face-to-face interview
- improving the coverage of the IVS by incorporating improved estimates of international students' living costs.

These changes affected household consumption expenditure (HCE) and exports of services from 1988 onwards.

Exports⁽¹⁾ Quarterly



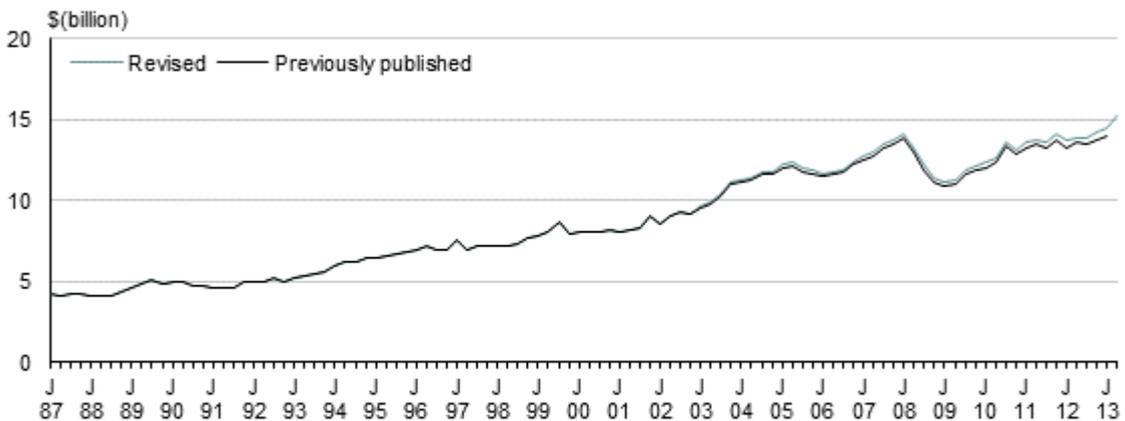
1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Imports of low-value goods purchased directly by households

We are including an estimate for expenditure by New Zealand households on low-value international purchases. Spending on goods valued at less than \$1,000 is an area of known undercoverage in imports data. This spending is difficult to capture because recording information on purchases below tax thresholds is not mandatory. Including this estimate has increased HCE and imports of goods from 2000 onwards.

Imports⁽¹⁾ Quarterly



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Household consumption expenditure commodity split

We have reviewed the way HCE is compiled, so that it is consistent with the international commodity classification COICOP (Classification of Individual Consumption According to Purpose).

The new compilation method rearranges existing data. It shifts household spending between categories, so did not change total HCE in current prices. HCE in volumes has revised due to the way volume series are combined.



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

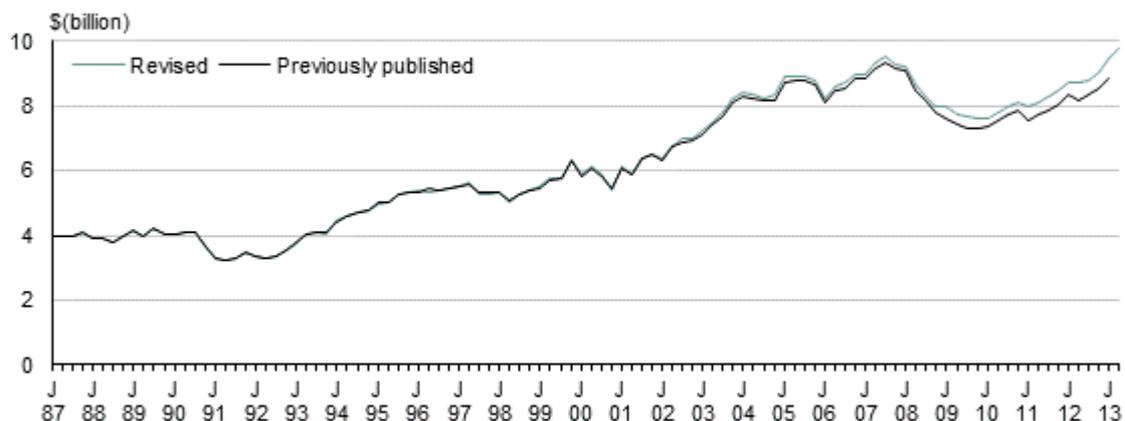
Source: Statistics New Zealand

Business investment methods

We improved some of the systems and methods that we use to compile investment by businesses in fixed assets. The changes have caused revisions to most asset types from 1988 onwards, although there is little effect on the overall growth rate of business investment before 2003.

Changes to plant, machinery, and equipment (PME) increased the growth rate of the volume of business investment from 2002 onwards. The main change to PME is using a better price index to deflate investment in computers. Using an overseas trade index is an improvement, as it is weighted to reflect the types of computers imported into New Zealand. Imports of goods also revised from 2002 onwards, as it uses the same price index as PME. There are also revisions due to correcting a deflator issue which affected non-computer PME.

Gross fixed capital formation⁽¹⁾ Quarterly



1. Seasonally adjusted chain-volume series expressed in 1995/96 prices.

Source: Statistics New Zealand

Inventories methods

We revised inventories after correcting an issue where inventories were not correctly contributing to total GDE. These revisions vary in size and direction and affect inventories and related series, such as GDE, between June 2006 and March 2012.

Chaining non-profit institutions serving households

We improved the measurement of expenditure by non-profit institutions serving households by changing to a chain-volume series (the components of this series were previously added together). This change revised private consumption expenditure and GDE from 1988 onwards, although the effect is small, especially before 1996.

Other revisions

In addition to the major changes listed above, other revisions were incorporated this quarter. These are outlined below.

Gross domestic product

- Wholesale trade was revised due to revisions from the Wholesale Trade Survey: September 2013 quarter; and retail, accommodation and restaurants was revised due to revisions from the Retail Trade Survey: September 2013 quarter.
- Updated input data resulted in revisions to agriculture, forestry and fishing; mining; electricity, gas, water, and waste services; transport, postal, and warehousing; and financial and insurance services.

- Mining was revised due to a change in the methodology for calculating value added for metal ore and non-metallic mineral mining and quarrying. This change involved introducing chain-linking at the indicator level, to aggregate together the input series for individual minerals. The previous method summed together these series. This new method was implemented from the December 2005 quarter.
- Updated consumption of fixed capital values resulted in revisions for professional, scientific, technical, administrative, and support services; local government administration; and arts, recreation, and other services.
- Transport, postal and warehousing; retail, accommodation and restaurants; and professional, scientific, technical, administration, and support services were revised due to the incorporation of the improved measurement of spending by international visitors in New Zealand.

Expenditure on gross domestic product

- Household consumption expenditure was revised due to updated retail trade data, selected services survey data, tax data, and input data for household utilities.
- Local government final consumption expenditure was revised due to updated quarterly local authority survey data.
- Gross fixed capital formation was revised due to revised Economic Survey of Manufacturing data, revised overseas trade data, and updated input data for transfer costs.
- Inventories was revised due to updated input data and annual benchmarks for agriculture inventories, updated input data for forestry inventories, revised Economic Survey of Manufacturing data, and revised Wholesale Trade Survey data.
- Exports and imports of goods and services were revised due to revised overseas trade data.

The following table shows the previously published and revised quarterly movements for GDP and expenditure on GDP.

Quarter	Gross domestic product – percent change from previous quarter		Expenditure on gross domestic product – percent change from previous quarter	
	Previously published	Revised	Previously published	Revised
June 2008	-1.0	-1.2	-1.6	-1.6
September 2008	-0.2	-0.2	-0.1	-0.4
December 2008	-0.6	-0.6	-0.1	-0.1
March 2009	-1.1	-1.0	-0.3	-0.2
June 2009	-0.3	-0.2	1.0	1.3
September 2009	0.6	0.6	0.6	0.9
December 2009	1.6	1.5	0.5	0.6
March 2010	0.1	0.2	0.4	1.0
June 2010	0.8	1.0	0.2	0.3
September 2010	-0.3	-0.3	-1.2	-1.3
December 2010	-0.4	-0.5	0.1	-0.1
March 2011	0.7	0.9	0.5	0.2
June 2011	0.6	0.8	0.9	1.0

September 2011	0.8	0.9	0.9	1.3
December 2011	0.3	0.7	0.4	0.8
March 2012	1.0	0.9	1.3	0.6
June 2012	0.4	0.2	0.4	0.3
September 2012	0.3	0.2	0.4	0.5
December 2012	1.6	1.3	1.3	1.2
March 2013	0.4	0.5	0.3	0.5
June 2013	0.2	0.3	0.1	0.2

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Tables

The following tables are available in Excel format from the 'Downloads' box. If you have problems viewing the files, see [opening files and PDFs](#).

- 1 Gross domestic product by industry – September 2013 quarter
- 2 Expenditure on gross domestic product – September 2013 quarter
- 3 Gross domestic product by industry – quarterly value
- 4 Gross domestic product by industry – quarterly percentage change
- 5 Gross domestic product by industry – annual value
- 6 Gross domestic product by industry – annual percentage change
- 7 Expenditure on gross domestic product – quarterly value
- 8 Expenditure on gross domestic product – quarterly percentage change
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- 16 Imports of goods and services – quarterly value and percentage change
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- 25 Gross domestic product by industry – percentage change from same quarter of previous year
- 26 Gross domestic product by industry – year ended September value
- 27 Gross domestic product by industry – year ended September percentage change
- 28 Expenditure on gross domestic product – year ended September value and percentage change

Supplementary tables

These tables show a longer time series for expenditure on gross domestic product and gross domestic product by industry than is included in the September 2013 quarter tables. See the 'Downloads' box.

- 1 Expenditure on gross domestic product – annual value
- 2 Expenditure on gross domestic product components – quarterly value
- 3 Expenditure on gross domestic product components – quarterly percentage change
- 4 Gross domestic product by industry – annual value
- 5 Gross domestic product by industry – quarterly value
- 6 Gross domestic product by industry – quarterly percentage change

Access more data on Infoshare

Use [Infoshare](#) to access time-series data specific to your needs. For this release, select the following categories from the Infoshare homepage:

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