

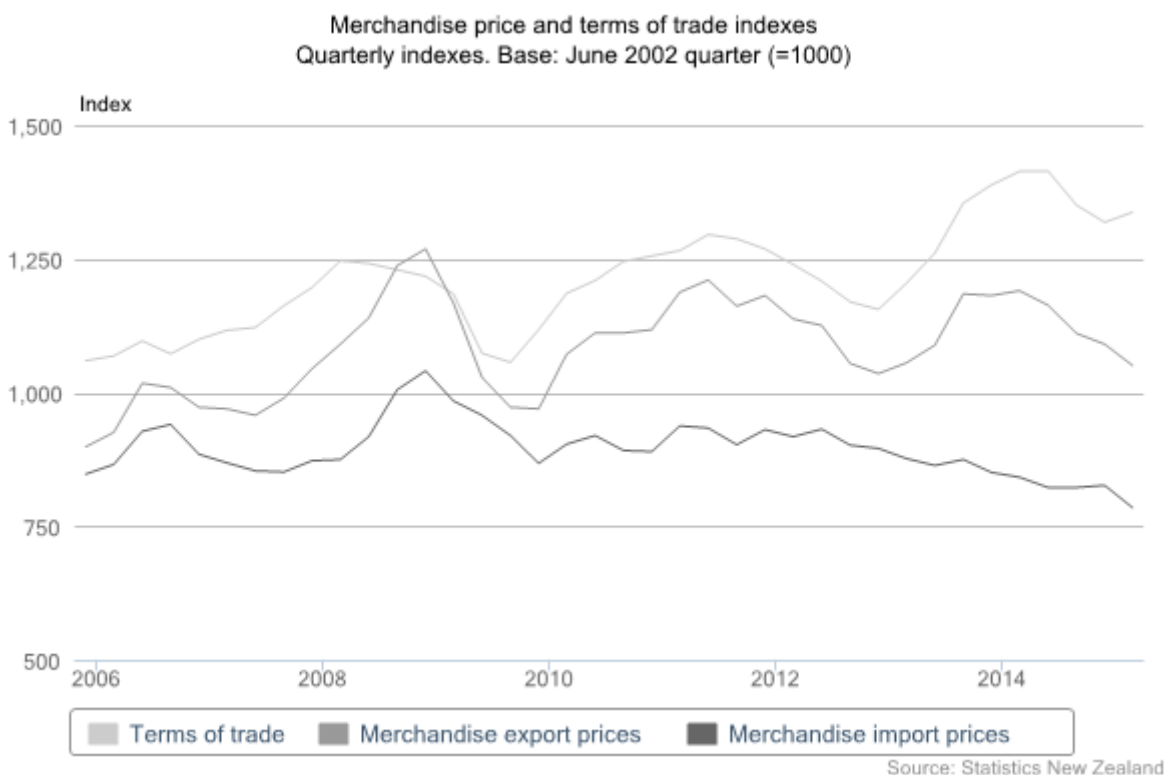
Overseas Trade Indexes (Prices and Volumes): March 2015 quarter

Embargoed until 10:45am – 02 June 2015

Key facts

The following movements occurred in the March 2015 quarter, compared with the December 2014 quarter.

- The **merchandise** terms of trade rose 1.5 percent.
 - Export prices for goods fell 3.7 percent, while import prices for goods fell 5.1 percent.
 - Seasonally adjusted export volumes rose 1.4 percent, while seasonally adjusted import volumes rose 0.1 percent.
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- The **services** terms of trade rose 3.1 percent.
 - Services export prices rose 0.6 percent, while services import prices fell 2.4 percent.



Liz MacPherson, Government Statistician
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Commentary

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- [Export goods prices fall while volumes rise](#)
- [Import goods prices fall as volumes rise](#)
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All comparisons are between the March 2015 and December 2014 quarters, and all volumes and values are seasonally adjusted unless otherwise stated. All prices are unadjusted.

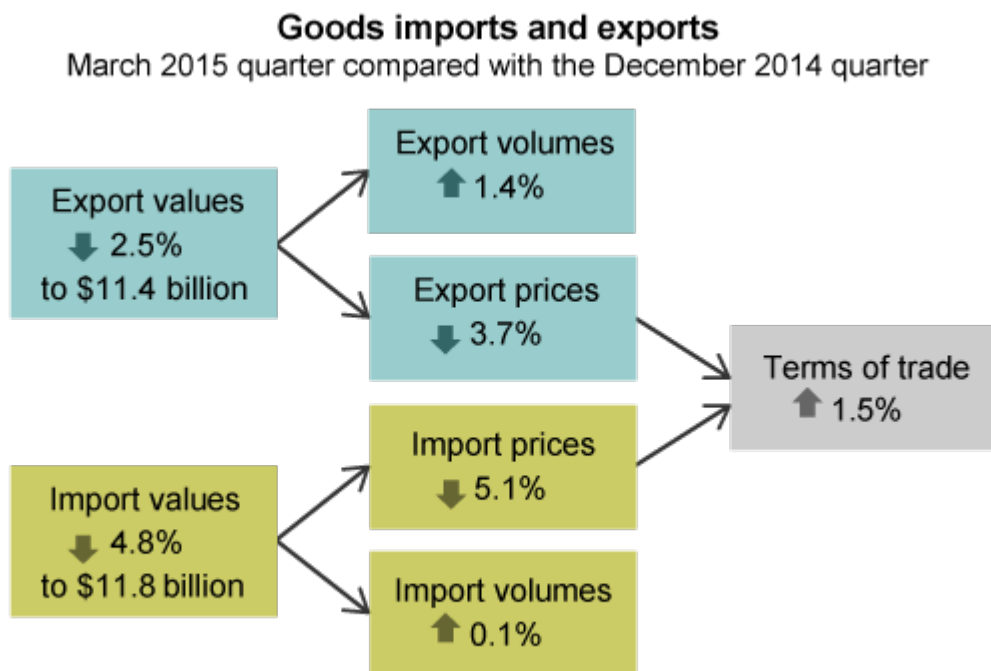
Overview for the March 2015 quarter

The **merchandise terms of trade** rose 1.5 percent in the March 2015 quarter, due to import prices falling more than export prices. This rise in the terms of trade follows two falls in a row.

In the March 2015 quarter:

- export prices for goods fell 3.7 percent, while import prices for goods fell 5.1 percent
- seasonally adjusted export volumes rose 1.4 percent, while seasonally adjusted import volumes rose 0.1 percent
- seasonally adjusted value of exports was down 2.5 percent (to \$11.4 billion), while seasonally adjusted import value was down 4.8 percent (to \$11.8 billion).

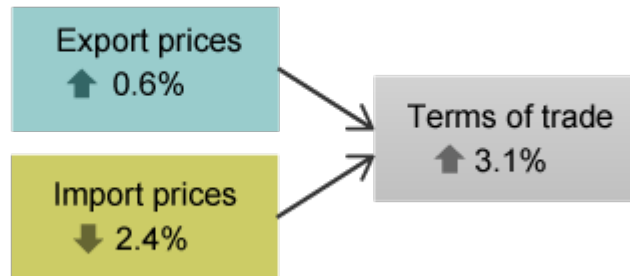
Terms of trade is a measure of the purchasing power of New Zealand's exports abroad. The latest rise means 1.5 percent more goods imports could be funded by a fixed quantity of goods exports than in the December 2014 quarter.



Source: Statistics New Zealand

The **services terms of trade** rose 3.1 percent in the March 2015 quarter, due to import prices falling 2.4 percent and export prices rising 0.6 percent.

Services imports and exports prices March 2015 quarter compared with the December 2014 quarter



Source: Statistics New Zealand

See [definitions](#) for more information on services.

Export goods prices fall while volumes rise

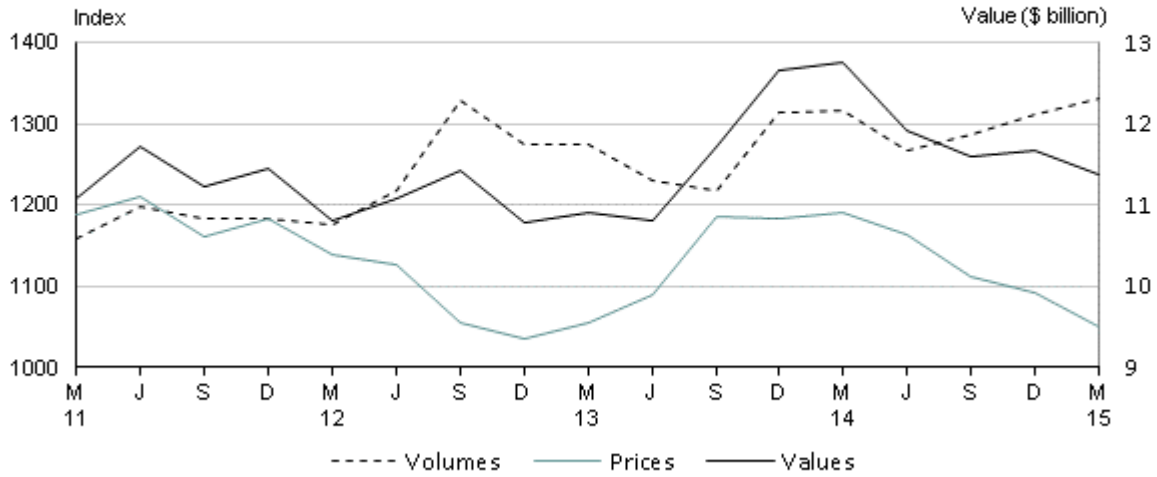
Export goods prices fell 3.7 percent in the March 2015 quarter, while volumes rose 1.4 percent. Prices have been falling since the June 2014 quarter, while volumes have been increasing since the September 2014 quarter. The total value of exports fell 2.5 percent in the March 2015 quarter, to \$11.4 billion.

Dairy contributed the most to the fall in total export prices. Petroleum and petroleum product prices and meat prices also fell, while forestry prices rose. Fruit, non-food manufactures, and meat contributed the most to the rise in volumes, while dairy and forestry volumes fell.

Excluding dairy, export prices fell about 3.2 percent.

The Reserve Bank trade weighted index (TWI) rose 0.5 percent in the March 2015 quarter. A rising New Zealand dollar has a downward effect on export and import prices. While strengthening against some of New Zealand's main trading partner currencies, the New Zealand dollar fell against the US dollar.

Exports price and volume indexes, and values
 Quarterly (volumes and values are seasonally adjusted)
 Prices base: June 2002 quarter (=1000)



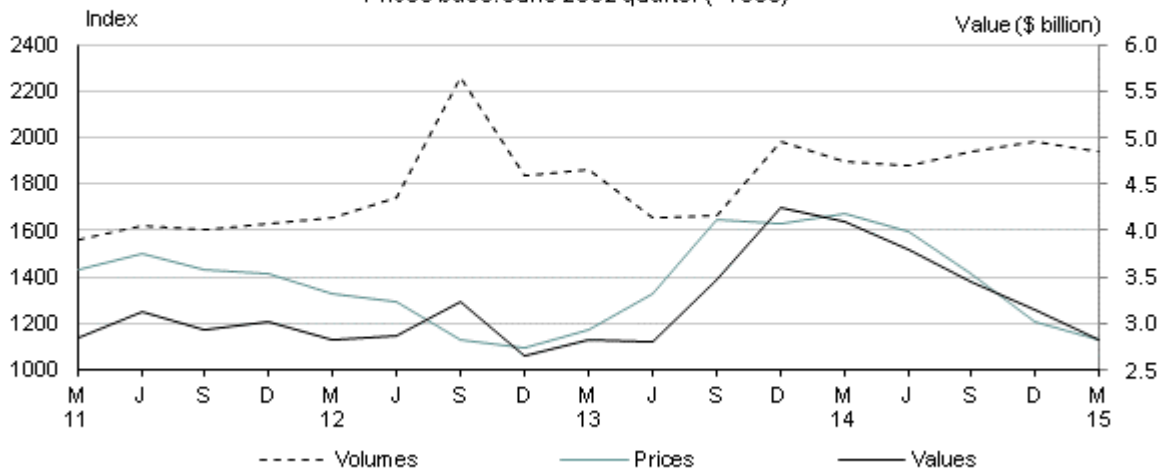
Source: Statistics New Zealand

Dairy prices and volumes both fall

Dairy prices fell 6.3 percent in the March 2015 quarter, continuing the fall that began in the June 2014 quarter. Dairy volumes fell 2.2 percent, while their value fell 9.7 percent – to \$2.8 billion in the latest quarter.

Milk powder led the fall in dairy prices – down 10 percent. Milk powder prices have been falling since the June 2014 quarter. The fall in dairy volumes was led by milk powder (down 1.1 percent) and butter (down 2.9 percent).

Dairy export price and volume indexes, and values
 Quarterly (volumes and values are seasonally adjusted)
 Prices base: June 2002 quarter (=1000)

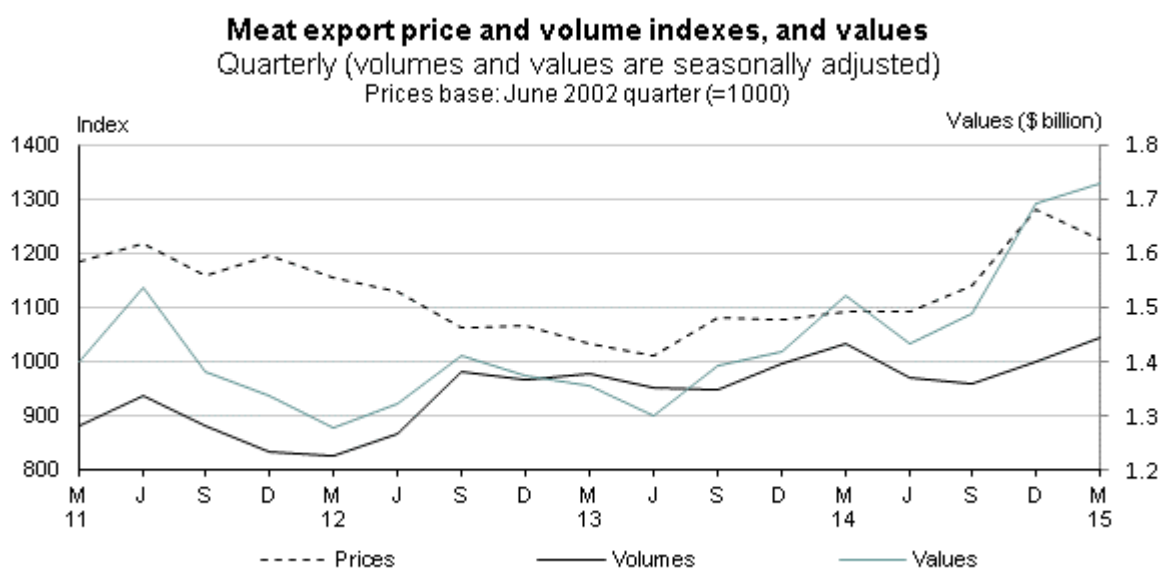


Source: Statistics New Zealand

Meat prices fall from high level while volumes rise

Meat prices fell 4.5 percent in the March 2015 quarter, while volumes rose 4.6 percent, and their value rose 2.1 percent to \$1.7 billion. Meat prices were at their second-highest level (December 2014 quarter was the highest) while volumes were at their highest level since the series began in the June 1990 quarter.

The fall in meat prices was led by beef (down 5.9 percent) and lamb (down 5.7 percent); the rise in volumes was led by beef (up 8.1 percent) and lamb (up 7.7 percent). Values for beef (up 2.3 percent to \$0.8 billion) and lamb (up 4.4 percent to \$0.7 billion) were both up in the March 2015 quarter.



Source: Statistics New Zealand

Wood pushes forestry product prices up and volumes down

Forestry product prices rose 1.4 percent in the March 2015 quarter, while both the volume and value fell 4.7 percent.

Wood was the main influence on the rise in forestry prices and the fall in forestry volumes – wood prices were up 2.5 percent, while for volumes, wood was down 6.0 percent.

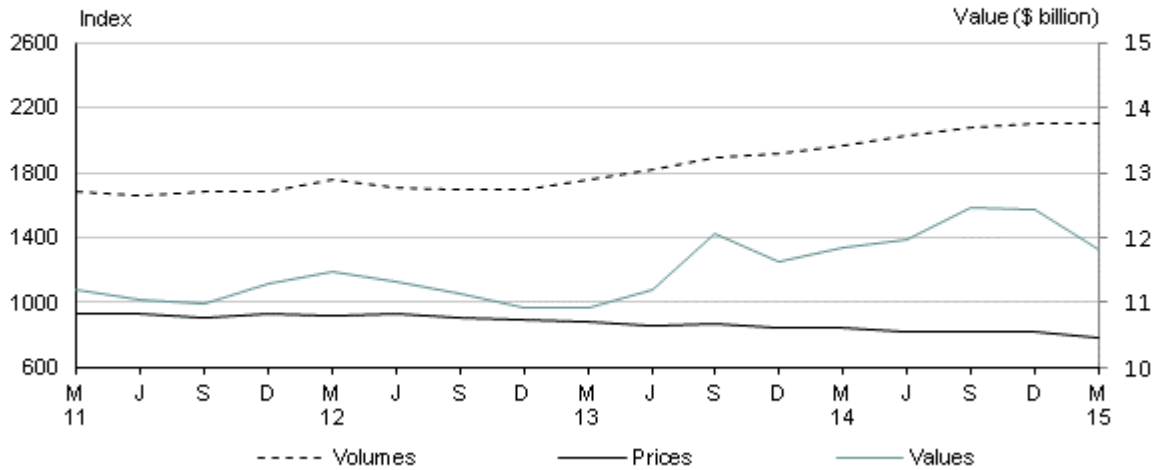
Import goods prices fall as volumes rise

Import goods prices fell 5.1 percent in the March 2015 quarter, while volumes rose 0.1 percent. The import price index was at its lowest level since the September 1988 quarter, while volumes were at their highest levels since the series began in the June 1990 quarter. The total import value fell 4.8 percent in the March 2015 quarter, to \$11.8 billion.

Petroleum and petroleum products contributed the most to the fall in total prices, while consumption goods, and petrol and avgas led the rise in volumes.

Excluding petroleum and petroleum products, import prices rose 0.1 percent in the latest quarter and volumes rose 1.3 percent.

Imports price and volume indexes, and values
 Quarterly (volumes and values are seasonally adjusted)
 Prices base: June 2002 quarter (=1000)



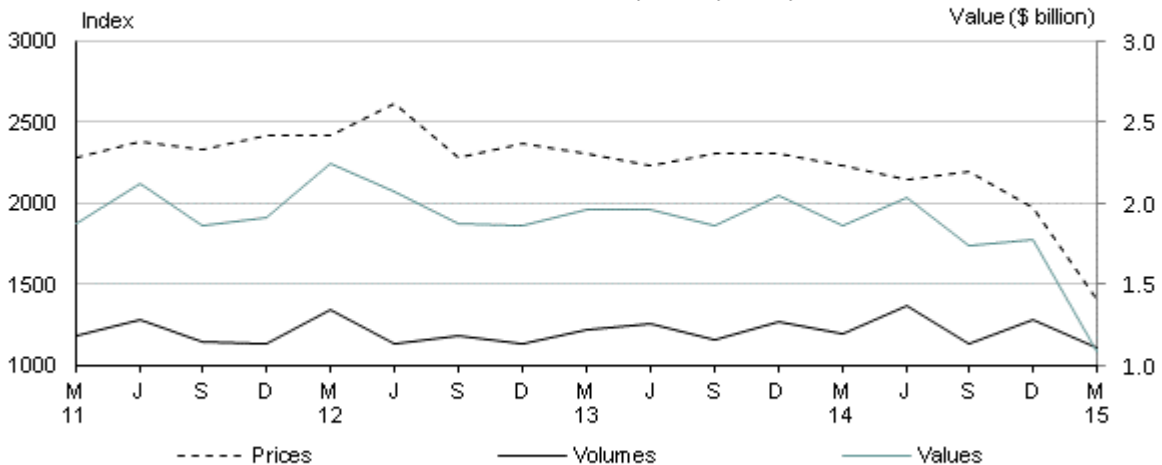
Source: Statistics New Zealand

Petroleum and petroleum product import prices and volumes fall

Petroleum and petroleum product prices, volumes, and values are not seasonally adjusted. Petroleum and petroleum product prices fell 29 percent in the March 2015 quarter, while the volume was down 14 percent. These prices were at their lowest quarterly level since the June 2005 quarter. Excluding fuels, import prices rose 0.1 percent in the March 2015 quarter. Petroleum and petroleum product volumes were at their lowest level since the September 2010 quarter, while their value (\$1.1 billion) was at the lowest level since the December 2005 quarter.

Petroleum and petroleum products price and volume indexes, and values

Quarterly, seasonally unadjusted
 Indexes base: June 2002 quarter (=1000)



Source: Statistics New Zealand

Import prices and volumes by broad economic categories

Intermediate goods

Intermediate goods prices (down 10 percent) contributed the most to the fall in total import prices – mainly due to falls in primary fuels and lubricants (down 29 percent), especially crude oil. The volume fell 1.0 percent – led by primary fuels and lubricants (down 13 percent), and processed fuels and lubricants (down 37 percent). Rises in processed industrial supplies (up 2.2 percent) and parts and accessories (up 1.5 percent) partly offset the falls.

Consumption goods

The volume of consumption goods was up 2.3 percent, to contribute the most to the rise in total import volumes. Durables (eg televisions and digital cameras) led the rise (up 8.4 percent). Consumption goods prices rose 1.3 percent.

Capital goods

A fall in the volume of capital goods (down 18 percent) was mainly due to transport equipment (down 15 percent), especially aircraft and parts. Machinery and plant volumes (down 3.0 percent) also fell – mobile phones contributed the most. For prices, capital goods rose 0.1 percent.

Other goods

The volume for passenger motor cars fell 13 percent in the March 2015 quarter while prices rose 1.0 percent. Petrol and avgas volumes rose 12 percent, following four consecutive quarterly falls, while prices fell 32 percent.

Looking at selected trading partners

The volumes and values in the following section are unadjusted, and compare the March 2015 quarter with the December 2014 quarter.

China

The terms of trade fell 4.4 percent.

- Export prices fell 2.3 percent, led by dairy prices.
- Import prices rose 2.2 percent, spread across a number of commodities.
- Export volumes fell 4.0 percent while values fell 6.2 percent.
- Import volumes fell 16 percent and values fell 14 percent.

Australia

The terms of trade fell 7.7 percent.

- Export prices fell 8.9 percent, led by crude oil and cheese prices.
- Imports prices fell 1.2 percent, spread across a number of commodities.
- Exports volumes fell 9.5 percent and values fell 18 percent
- Imports volumes fell 20 percent and values fell 21 percent

United States

The terms of trade fell 3.3 percent.

- Export prices rose 0.3 percent, led by wool and caseinates prices.
- Import prices rose 3.8 percent, affected by the higher US dollar.
- Export volumes and values both rose 19 percent.
- Import volumes fell 27 percent and values fell 24 percent, influenced by aircraft imports in the December 2014 quarter.

Japan

The terms of trade fell 1.4 percent.

- Export prices fell 4.8 percent, led by kiwifruit prices.
- Import prices fell 3.5 percent, led by new petrol motor car prices.
- Export volumes fell 4.9 percent and values fell 9.5 percent.
- Imports volumes fell 11 percent and values fell 15 percent.

Crude oil is one of New Zealand's main import commodities. Large movements in crude oil prices can have a significant effect on the total import prices and terms of trade. It is typically imported from several countries, but not those above. All the countries New Zealand imports crude oil from are included in a "rest of the world" grouping:

Rest of the world includes all countries, other than the four above and European Union countries. For Rest of the world, the terms of trade rose 18 percent, with export prices falling 5.8 percent and import prices falling 20 percent. Import volumes rose 5.7 percent while values fell 16 percent. The fall in import prices and values were both influenced by crude oil.

Goods and Services Trade by Country: Year ended March 2015 will be published on 3 June 2015 and provide additional information about value of economic trade with our main trading partners.

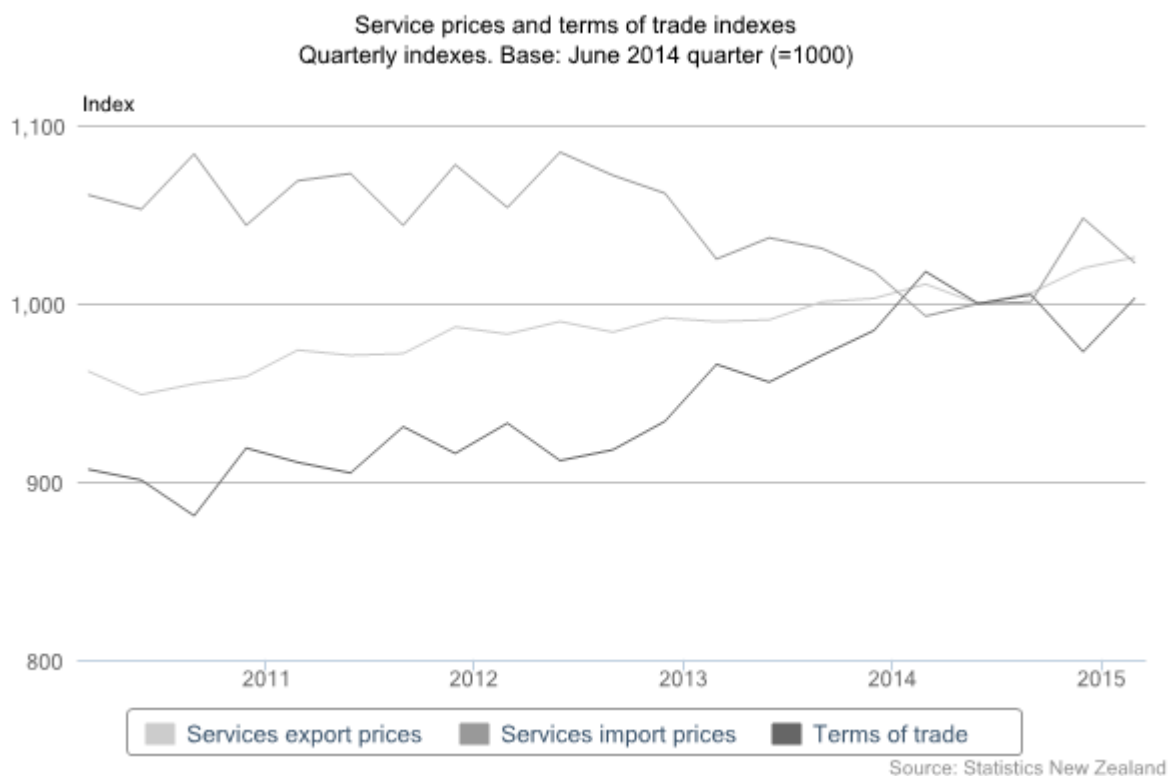
Prices rise for services exports and fall for services imports

The **services terms of trade** rose 3.1 percent in the March 2015 quarter, due to export prices rising and import prices falling.

Prices for **services exports** (ie services to non-residents) rose 0.6 percent in the March 2015 quarter. This rise was mainly influenced by travel services (up 1.1 percent, due to higher prices for personal travel services). Travel exports measures changes in the prices paid by overseas consumers and businesses travelling in New Zealand.

Prices for **services imports** (ie services provided by non-residents) fell 2.4 percent in the March 2015 quarter. The fall was influenced by transportation services – down 11 percent, following a 12 percent rise for the December 2014 quarter. The fall reflects seasonally lower prices for air passenger services. Improvements to the methodology and data sources for calculating air passenger transportation indexes means they now show more seasonal variation than previously.

Transportation imports measures changes in the prices paid by New Zealand consumers and businesses using foreign air and sea services.



Exchange rate information

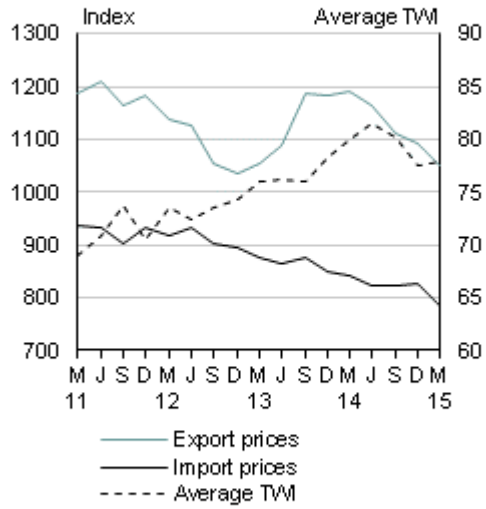
The Reserve Bank of New Zealand's trade weighted index (TWI) rose 0.5 percent in the March 2015 quarter. A rising New Zealand dollar has a downward influence on both export and import prices. We have changed from publishing the Reserve Bank's TWI based on five countries to the TWI based on 14 countries.

Import values are converted to New Zealand dollars by the New Zealand Customs Service (NZCS) using their exchange rates. These exchange rates can lag by 11 to 25 days compared with the Reserve Bank rates. The TWI we calculate using NZCS rates rose 0.9 percent in the March 2015 quarter.

See [Basis of valuation – merchandise trade](#) in the data quality section for more information on exchange rates.

The following graphs and tables give more information about exchange rate movements over the March 2015 quarter.

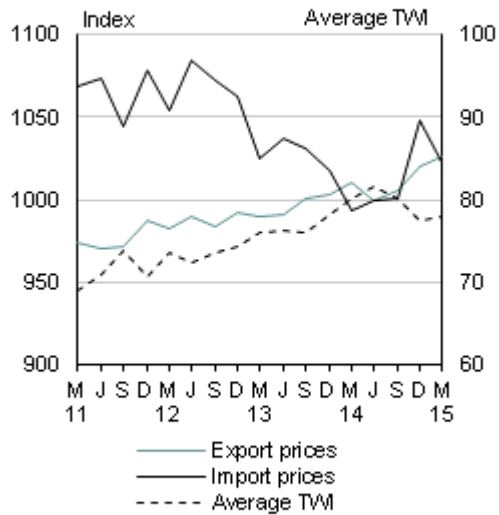
Merchandise trade indexes⁽¹⁾ and average trade weighted index⁽²⁾
Quarterly



1. Base: June 2002 quarter (=1000).
2. Base: June 1979 month (=100).

Source: Statistics New Zealand and Reserve Bank

Services trade indexes⁽¹⁾ and average trade weighted index⁽²⁾
Quarterly



1. Base: June 2014 quarter (=1000).
2. Base: June 1979 month (=100).

Source: Statistics New Zealand and Reserve Bank

Exchange rates for March 2015 quarter
Reserve Bank of New Zealand

	USA (NZ\$:US\$)	UK (NZ\$:pound)	Australia (NZ\$:A\$)	Japan (NZ\$:yen)	Euro (NZ\$:euro)	TWI
Change from December 2014 quarter (%)	-3.9	0.5	4.6	0.1	6.7	0.5

Exchange rates for March 2015 quarter
New Zealand Customs Service

	USA (NZ\$:US\$)	UK (NZ\$:pound)	Australia (NZ\$:A\$)	Japan (NZ\$:yen)	Euro (NZ\$:euro)	TWI
Change from December 2014 quarter (%)	-3.7	1.1	5.4	2.6	4.4	0.9

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

Definitions

About the overseas trade indexes

The overseas trade indexes measure changes in the prices, values, and volumes of imports and exports of goods and services over time. This gives an indication of how New Zealand's economy is performing.

- The **overseas merchandise trade indexes** measure changes in the price and volume levels of imports and exports of merchandise trade to and from New Zealand.
- The **overseas services trade price indexes** measure changes in price levels of imports and exports of services to and from New Zealand on a quarterly basis.
- The **overseas terms of trade index** measures the changing volume of merchandise imports that can be funded by a fixed volume of New Zealand's merchandise exports.

It is the change between two index numbers that is important. An individual index number has no meaning.

More definitions

Capital goods: produced assets used repeatedly or continuously for longer than one year in industrial production processes. Examples are machinery, trucks, and aircraft.

cif: cost of goods, including insurance and freight to New Zealand.

Consumption goods: goods used (without further transformation in industrial production processes) by households, government, or non-profit institutions serving households.

fob: is free on board (the value of goods at New Zealand ports before export).

Government services (exports): includes sales of capital assets (excluding land), estimated expenditure of foreign embassies in New Zealand, the portion of the government's international aid spent in New Zealand, and the government's receipts from immigration fees.

Government services (imports): operational expenses of New Zealand's embassies overseas and the costs of the New Zealand defence forces stationed overseas.

Index reference period: the benchmark with which prices in other periods are compared (eg if the index number in a later period is 1150, prices have increased by 15 percent since the index reference period). Prices for later periods can also be compared in a similar fashion.

Intermediate goods: goods used up or transformed in industrial production processes.

Merchandise trade: covers exports or imports of goods that alter the nation's stock of material resources. It includes goods leased for a year or more and excludes goods for repair.

Re-exports: are merchandise exports that were earlier imported into New Zealand and have less than 50 percent New Zealand content by value.

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.

Other services: services other than transportation, travel, and government services. Examples are insurance, royalties and licence fees, banking and financial services, computer and information services, telecommunications, and personal, cultural, and recreational services.

Transportation: the international carriage of goods and passengers. Includes freight, airfares, port services, and stevedoring.

Travel (exports): what overseas visitors spend while travelling in New Zealand, and the expenditure by international students in New Zealand.

Travel (imports): what New Zealanders spend while travelling overseas.

vfd: value for duty (the value of imports before insurance and freight costs are added). This is the value we use for goods imports.

Related links

Next release

Overseas Trade Indexes (Prices and Volumes): June 2015 quarter (provisional) will be released on 1 September 2015.

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

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

Past releases

[Overseas Trade Indexes](#) has links to past releases.

Related information

[Overseas merchandise trade](#) has information on the importing and exporting of merchandise goods between New Zealand and other countries. These statistics are published monthly.

[Balance of payments and international investment position](#) measures the value of New Zealand's transactions with the rest of the world, and provides a snapshot of our country's international financial assets and liabilities.

[National accounts](#) measure the values of economic aggregates such as gross domestic product, capital formation, and government and private consumption. They are published annually.

[Economic Survey of Manufacturing](#) provides a quarterly economic indicator of how our manufacturing sector is performing.

Data quality

Period-specific information

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

- [Data influencers](#)
- [Timing of published data](#)
- [Imputation for the March 2015 quarter](#)
- [Exchange rate changes](#)

General information

This section contains information that does not change between releases.

- [What the indexes measure](#)
- [Index coverage](#)
- [Information sources](#)
- [Basis of valuation](#)
- [Index type and calculation](#)
- [How we calculate the terms of trade](#)
- [Updating the OTI services price index classification](#)
- [Imputation](#)
- [Seasonally adjusted estimates – merchandise trade](#)
- [How we calculate the unit values of imported cars](#)
- [Directly surveyed prices](#)
- [International price indexes](#)
- [Consistency of BEC with national accounts' classes](#)
- [Contract indexation](#)
- [Release of latest results](#)
- [More information](#)

Period-specific information

Data influencers

We imputed the value of aircraft imported in December 2014 based on the value of twin-aisle aircraft imports. The imputed value has been revised in this release to adjust for exchange rate movements.

See the data quality section of [Overseas Merchandise Trade: September 2014](#) for our treatment of September quarter aircraft imports.

Timing of published data

We calculate the merchandise price indexes in this release from the same data we used in [Overseas Merchandise Trade: April 2015](#) monthly release (published 26 May 2015). We do not include updates published after this date.

Because OMT statistics are provisional for the three most-recent months, we may amend them in the three months after initial publication.

Merchandise price indexes are also provisional for one quarter, to allow us to include late data and amendments to the source data. Consequently, merchandise values in this OTI release that relate to the December 2014 quarter are based on later data than that originally published (2 March 2015).

We will update the provisional import volumes and values with *Overseas Trade Indexes (Prices and Volumes): June 2015 quarter (provisional)*, released on 1 September 2015. These will include more recent information that may affect the petroleum and petroleum products import prices, volumes, values, and total import prices, volumes, and values for the March 2015 quarter. We expect the effect to be small.

The services price indexes are final figures. We may revise these indexes when lagged prices are used in new indexes and are later replaced by current prices. However, they are usually revised only for significant errors.

Revised numbers are identified by an R in the tables that accompany this release.

Imputation for the March 2015 quarter

For the March 2015 quarter, our base annual imputation rates were 17.7 percent for exports and 38.0 percent for imports.

See [Imputation](#) for further information.

Exchange rate changes

A depreciating New Zealand dollar has an upward influence on both import and export prices in New Zealand dollars. The impact on the terms of trade depends on the relative mix of exports and imports for each currency.

The Reserve Bank's trade weighted index (TWI) rose 0.5 percent in the March 2015 quarter.

The TWI that Statistics NZ calculates using New Zealand Customs Service (NZCS) exchange rates, which are used to value merchandise imports, rose 0.9 percent in the March 2015 quarter.

These NZCS exchange rates differ from the weekly exchange rates used to calculate merchandise export values. We convert import values from foreign currencies, using the rates the NZCS sets every two weeks. These exchange rates are prepared 11 days before the effective date (when the item was imported) and are then applied for two weeks. Therefore, there is a lag of 11 to 25 days between the NZCS exchange rates and those the Reserve Bank publishes. This means that the NZCS exchange rate, and therefore the import prices, will be slower to show the effect of exchange rate changes than the Reserve Bank rates and the export prices.

General information

What the indexes measure

The OMT indexes are numerical series that indicate how a set of prices and volumes have changed between time periods. Each index measures changes in the level of prices rather than the actual prices. It is the change between two index numbers that is important. An individual index number has no meaning.

The overseas services trade indexes measure changes in price levels of services to and from New Zealand each quarter.

Price and volume measurement involves decomposing transaction values (in current prices) into their price and volume components. In principle, the price components should include changes arising solely from price changes, while all other changes (relating to quantity, quality, and compositional changes) should be included in the volume components. Our aim is to analyse which changes in aggregates are due to price movements, and which to volume changes. This is 'constant price' measurement, and implies the analysis of economic transactions valued at certain fixed prices.

Index coverage

The **merchandise trade indexes** include all commodities classified as merchandise trade, although the export indexes exclude re-exports, bunkering (re-fuelling the vessels), ships' stores, and passengers' effects.

The **services indexes** are based on the System of National Accounts 2008 (2008 SNA). The system establishes the range of services to be included in the indexes, and key practices we use to classify and process services data (eg the treatment of insurance).

Information sources

Merchandise trade

We derive the value and quantity data we use for calculating the merchandise price and volume indexes from Statistics NZ's overseas merchandise trade (OMT) statistics. These statistics are processed from export and import entry documents lodged with the NZCS by exporters, importers, and their agents.

We classify data using the Harmonised System (HS) 2012 classification — for processing the NZCS entries and publishing our overseas trade statistics. There are over 18,600 10-digit items in the HS classification.

See [Harmonised System \(HS\) 2012](#) for more details.

We derive HS 10-digit item-by-country unit values from our OMT statistics. We calculate quarterly item-by-country unit values by dividing the total value of an HS item exported or imported during the quarter by the total quantity of the item exported or imported during the quarter. We extensively edit these unit values and remove outliers before using the values in our OTI calculations.

For basic, homogeneous commodities not subject to ongoing quality change, unit values provide suitable indicators of price change. However, they are not good indicators of price change for heterogeneous goods (eg elaborately transformed goods, technically complex goods, or goods subject to rapid quality change). We selectively supplement unit values with prices collected directly from importers and exporters, and by international price indexes.

Services trade

We derive the value data we use to calculate the weights in the service indexes from our balance of payments (BoP) data. Every year, we use new weights to calculate the services indexes from the September quarter onwards. These weights use BoP data for the year ended June.

Pricing information we use to calculate the indexes is collected from our Commodity Price Survey, which collects prices for approximately 10,000 individual items. A postal survey collects prices from about 2,200 respondents, and is supplemented by prices gathered from international price indexes, generally each quarter (but sometimes annually). The price on the 15th day of the middle month of the quarter is used to measure domestic prices.

For the import services indexes, many prices come from international price indexes. Their collection depends on the frequency and timeliness of the indexes publication — if monthly, we use the middle month of the quarter; however, we may lag prices by a month or a quarter if the value for the relevant period is not available in time.

Basis of valuation

Merchandise trade

We calculate the **merchandise export indexes** using New Zealand-dollar (NZD) free on board (fob) values. Export fob values represent the actual or estimated transaction prices of goods, including costs incurred in delivering goods on board ships and aircraft at New Zealand export ports. We convert values given in foreign currencies into NZD, using the weekly exchange rates when the statistics are compiled. This means that any hedging will generally not be reflected in the OTI.

The **merchandise import indexes** use NZD value for duty (vfd) values which represent the value of goods excluding the cost of freight and insurance. The 2008 SNA recommends vfd for imports and is used in New Zealand's national accounts.

Merchandise import price and volume indexes are not directly affected by changes in the rates of duty payable on imported goods, as cif values do not include duty.

Services trade

The services price indexes use NZD values for both exports and imports. Exchange rates we use to calculate the services indexes differ from those used for the merchandise indexes. Prices collected in foreign currencies are converted using the exchange rate supplied by Westpac Bank for the 15th day of the middle month of the quarter. The foreign currencies used in the services indexes include the US dollar, Australian dollar, Fijian dollar, Japanese yen, and the United Kingdom pound.

Index type and calculation

Merchandise trade

The merchandise index series are of the chain-linked Fisher Ideal type.

Calculating a Fisher Ideal index involves first calculating two indexes. One, the Laspeyres, is base-weighted and uses expenditures from an earlier period to weight price or volume movements. The other, the Paasche, is current-weighted and uses expenditures from a current period to weight price or volume movements

In most situations covered by index numbers, price and quantity changes are negatively correlated. In such cases, Laspeyres indexes tend systematically to record greater increases than Paasche indexes, with the gap between them tending to widen over time.

The merchandise index series have a June quarter price reference period, and are linked to the index for the June quarter of each year. We have annual expenditure weight reference periods for both the Laspeyres (previous June year) and Paasche (year to each quarter) components of the index.

The overseas trade price indexes are calculated by:

1. calculating Laspeyres and Paasche price indexes for the current quarter compared with the previous June quarter
2. calculating Fisher Ideal price indexes for the current quarter, compared with the previous June quarter — the geometric mean (or square root) of the Laspeyres and Paasche price indexes as calculated in step 1
3. linking the Fisher Ideal price index for the current quarter compared with the previous June quarter (calculated in step 2) to the index for the previous June quarter, to provide a continuous quarterly time series.

Our volume index methodology involves:

Calculating Laspeyres and Paasche volume indexes for the current quarter (based on the previous June quarter) by deflating the change in dollar value from the previous June quarter to the current quarter, using the Paasche and Laspeyres price indexes, respectively (calculated in step 1 above). We repeat steps 2 and 3 as above, using volume (rather than price) indexes.

We calculate annual price indexes as volume index-weighted averages of the four component quarter price indexes, and the annual volume indexes as the simple average of the four component quarterly volume indexes.

We assign expenditure weights at the HS 10-digit item-by-country level. Item and index weights are not fixed. They vary from quarter to quarter and from year to year as the relative values of the goods that New Zealand exports and imports change.

Services trade

The services indexes are an annually chain-linked Laspeyres price index series. We determine the weights by the relative importance of services and businesses within the service industry, using information from surveys, censuses, and other sources.

How we calculate the terms of trade

We calculate the **merchandise terms of trade index** as the ratio of the total export price index to the total import price index, which we present on an index reference period of the quarter ended June 2002 (=1000).

We calculate the **services terms of trade index** as the ratio of the total services export price index to the total services import price index, using the June 2014 quarter as the index reference period.

An index value above (or below) 1000 indicates that the terms of trade are more (or less) favourable than in the index reference period.

An increase in the terms of trade index indicates the real purchasing power of exports has increased, while a decrease indicates a drop in the purchasing power of exports.

Updating the OTI services price index classification

From the September 2014 quarter onwards, the OTI (prices) for services use updated information from the *Balance of Payments Manual*, sixth edition (BPM6). The impact is not large.

The two main changes that affect the OTI are:

- 'merchanting' changes from being classified as services to goods
- 'repairs on goods' changes from being classified as goods to services.

Series references

The BPM6-based overseas services trade price indexes series have new series references as follows:

- Services import (OTPQ.SSIP---) e.g. OTPQ.SSIP999
- Services export (OTPQ.SSEP---) e.g. OTPQ.SSEP999
- Services terms of trade (OTPQ.STTS---) e.g. OTPQ.STTS999

See [Preview of 2014 balance of payments improvements](#) for more information.

Index reference period

We recalculated the OTI (prices) for services from the December 2009 quarter to the June 2014 quarter using new weights and the BPM6 changes.

The new index reference period is the June 2014 quarter (=1000).

For index series with coverage changes (ie other services and transportation services), the new index time series starts from the December 2009 quarter. Those with no coverage changes (ie travel services and government services) are linked to the old series at the December 2009 quarter.

The BPM6-based OTI (prices) for services are, from the September 2014 quarter onwards, the official set of indexes we maintain. As such, we have discontinued the existing OTI (prices) services series on Infoshare, ending in the June 2014 quarter.

The choice of an index reference period is arbitrary and the percentage movement in the indexes are unaffected by the choice of the index reference period.

Expression base

The merchandise trade index series are expressed on base: quarter ended June 2002 (=1000).

The services trade price index series are expressed on base: quarter ended June 2014 (=1000).

Imputation

There are three types of explicitly priced items:

- reliable unit values based on merchandise trade data
- prices collected directly from importers or exporters

- international price indexes used as price indicators.

We impute prices for remaining items using price movements of items of a similar type that are more reliable indicators.

The overseas trade indexes are Fisher Ideal indexes. As Fisher Ideal indexes are calculated at the country grouping level (for the European Union (EU) and the 'Rest of World' (ZZ)), and the HS 10-digit item level for all countries, imputation occurs at up to four levels, as the table below shows.

Imputation procedures				
Type of index	First level	Second level	Third level	Fourth level
HS10 country grouping (EU, ZZ)	Remainder of index			
HS10 item	HS10 country grouping (EU, ZZ)	Remainder of index		
HS2 chapter	HS10 country grouping (EU, ZZ)	HS10 item	Remainder of index	
Standard or broad economic category (BEC) index	HS10 country grouping (EU, ZZ)	HS10 item	HS chapter or part chapter	Remainder of index

Base annual imputation rates are the dollar values of goods in the previous June year of the index's imputed items, as a percentage of the index's total dollar value for the previous June year.

Seasonally adjusted estimates – merchandise trade

We can split time series into trend, seasonal, and irregular components. Seasonal adjustment aims to eliminate the impact of regular seasonal events (eg lambing or harvesting) on time series. This makes the data for adjacent quarters more comparable. Trend estimation removes the seasonal and irregular components. Trend estimates reveal the underlying direction of movement in a series and are used to identify turning points.

We use the X-13-ARIMA-SEATS package to produce the seasonally adjusted and trend estimates referred to in the media release, key facts, commentary, and tables.

We revise the most-recent seasonally adjusted and trend figures each quarter. This enables us to better estimate the seasonal component and remove it from the series. The largest revisions occur in the quarter before the current quarter.

How we calculate the unit values of imported cars

Calculating price movements for the main HS 10-digit item codes for cars differs from the calculation we use for other items in the OTI. We calculate used-car codes for the previous June quarter and current quarter prices, for each year of manufacture. The new car codes have prices calculated for each of the main makes of car recorded under the codes. We weight movements in these prices by the value of cars imported, for each year of manufacture (used cars) and make of car (new cars), to give Paasche, Laspeyres, and Fisher indexes at the HS 10-digit item-by-country level.

The dollar value of the cars treated in this way made up 8.9 percent of the total dollar value of imports in the year to June 2003.

Directly surveyed prices

We collect prices directly from importers and exporters for selected goods that are imported or exported regularly, in the same form to the same or similar specification items may not have a specified unit of quantity, or may fall under an HS code with a heterogeneous description.

We began collecting these prices in 2002, through the commodity price survey we use for the producers price index (PPI).

The process of adding to the pool of directly surveyed prices is an ongoing one and is part of the overseas merchandise trade index quality assurance programme.

International price indexes

We use international price indexes selectively as a proxy to measure price change faced by importers for goods that are irregularly imported (eg public transport equipment), imported to one-off specifications (eg telephonic and telegraphic apparatus), and for technically complex goods subject to rapid quality change (eg computer equipment).

The table below lists the areas of the HS classification and goods where international price indexes are used, and the type of index selected as a proxy for price changes New Zealand importers face. We mainly use the US PPI, with some use of the US HS export price index. In both cases, monthly international price index numbers are converted to quarterly index numbers and then exchange-rate adjusted using the NZCS rates of exchange. The table lists the main goods for which we currently use international price indexes in the import indexes.

International price index use		
HS chapter	Goods	International price index
84	Mechanical machinery	
	Printing machinery	US producer price index
	Computer equipment	US producer price index
	Computer and office equipment parts and accessories	US producer price index
85	Electrical machinery	
	Telephonic and telegraphic apparatus	US HS export price index
	Radio-telephonic parts	US HS export price index
86	Railway equipment	US producer price index
87	Vehicles other than railway equipment	Minor use of US HS export price index
88	Aircraft	US producer price index
89	Ships	US producer price index

The US PPI indexes we use for computer equipment, parts, and accessories are compiled using hedonic quality adjustment techniques designed to remove the effect of quality improvements and isolate pure price change. The US PPI indexes for computer equipment, parts, and accessories we use in the imports price index are lagged one quarter, to reflect a potential delay from the time new technology is available domestically in the US to the time it is imported into New Zealand. The US computer indexes used in the merchandise imports price index, and the one-quarter lag, are both broadly in line with the approach we've used for some time to calculate values for the quarterly constant price imports we include in gross domestic product.

Consistency of broad economic categories with national accounts' classes

Broad economic categories (BECs) are arranged, as far as practicable, to align with the System of National Accounts' three basic classes: capital goods, intermediate goods, and consumption goods. We categorise commodities in BECs by their main end use (eg all video recorders are treated as consumption goods even though some are used in business).

Contract indexation

Parties in commercial contracts use a range of our price indexes in their indexation clauses (also known as contract escalation clauses). An indexation clause provides an agreed procedure for adjusting an originally contracted price, to reflect changes in costs or prices during the life of the contract.

Contract Indexation: A Guide for Businesses provides information on the price indexes we produce and issues relating to their use in indexation clauses. The guide also outlines points to consider when preparing an indexation clause, and includes an example of the mechanics of a simple indexation formula.

Release of latest results

Merchandise trade provisional indexes are available within nine weeks of the end of the reference quarter. We release final indexes within 22 weeks of the end of the reference quarter.

We only release final data for the services indexes. This data is available at the same time as the provisional merchandise trade indexes.

More information

See Overseas trade indexes for more information.

Statistics in this release have been produced in accordance with the Official Statistics System principles and protocols for producers of Tier 1 statistics for quality. They conform to the Statistics NZ Methodological Standard for Reporting of Data Quality.

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Revisions

Updates to previously published material

The overseas trade indexes are provisional for one quarter to allow for receiving and editing late and amended trade documentation. The following table shows updates to index numbers.

December 2014 quarter merchandise overseas trade indexes; prices, values and volumes (unadjusted)							
	Prices			Volumes		Values	
	Exports	Imports	Terms of trade	Exports	Imports	Exports	Imports
Infoshare series	OTPQ. SEO1E95	OTPQ. SIO1I95	OTPQ. STTZZ5	OTVQ. SEA2E91	OTVQ. SIA2I91	OTVQ. SEA3E91	OTVQ. SIA3I91
Provisional Dec 2014 qtr Published 2 Mar 2015	1092	824	1325	1344	2220	11,909	13,132
Final Dec 2014 qtr Published 2 Jun 2015	1091	827	1319	1345	2214	11,907	13,136

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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](#).

Prices tables

- 1.01 Overseas trade price and terms of trade indexes
- 1.02 Overseas merchandise trade price and terms of trade indexes
- 2 Merchandise export price indexes
- 3 Merchandise import price indexes
- 4.01 Merchandise imports by broad economic category, price indexes
- 4.02 Merchandise imports by broad economic category, price index percentage change from previous period
- 5 Overseas trade in services price indexes
- 6 Exchange rates, Reserve Bank of New Zealand

Volumes and values tables

- 1.01 Overseas merchandise trade, seasonally adjusted volumes and values
- 1.02 Merchandise exports and imports, values, price indexes, and volume indexes
- 2.01 Merchandise export volume indexes and values
- 2.02 Seasonally adjusted merchandise export volume indexes
- 2.03 Seasonally adjusted merchandise export values
- 3.01 Merchandise import volume indexes and values
- 3.02 Seasonally adjusted merchandise import volume indexes
- 3.03 Seasonally adjusted merchandise import values
- 4.01 Merchandise imports by broad economic category, volume indexes
- 4.02 Seasonally adjusted merchandise imports by broad economic category, volume indexes
- 4.03 Seasonally adjusted merchandise imports by broad economic category, volume index percentage change from preceding period
- 5.01 Related series, quantities

Access more data on Infoshare

Infoshare

Select the following categories from the Infoshare homepage for time series data for this release:

Subject category: **Imports and exports**

Group: **Overseas Trade Indexes – Prices**

Group: **Overseas Trade Indexes – Volumes and Values – OTV**

More detailed explanatory notes and a full list of available indexes and related dollar-value series are available on request.

Next release

Overseas Trade Indexes (Prices and Volumes): June 2015 quarter (provisional) will be released on 1 September 2015.