Preview of 2017 national accounts improvements

New Zealand Government

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Stats NZ Tatauranga Aotearoa
Wellington, New Zealand

Contact
Stats NZ Information Centre: info@stats.govt.nz
Phone toll-free 0508 525 525
Phone international +64 4 931 4600

www.stats.govt.nz

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1 Purpose and summary

Preview of 2017 national accounts improvements presents the improvements we will make to New Zealand's national accounts. It provides information and analysis to help technical users of national accounts and gross domestic product (GDP) data anticipate the impact of revisions in the following releases:

- *National accounts (industry production and investment): Year ended March 2016* (scheduled for 24 November 2017)
- *National accounts (income and expenditure): Year ended March 2017* (scheduled for 24 November 2017)
- *Gross domestic product: September 2017 quarter* (scheduled for 21 December 2017).

Note that the data in this paper are broad indications of the revisions that can be expected. These revisions are subject to changes in the final publications.

The improvements and benefits to customers

In 2017, we analysed and reconciled an extra year of national accounts data; improving the goods and services flows up to the March 2016 year. The major benefit for customers is that the statistics will reflect a more up-to-date structure of the economy, which allows the national accounts, GDP and associated statistics to be more responsive to changes that are occurring in the short-term. The timeliness also improves productivity statistics, the tourism sector account (TSA), and regional GDP (rGDP) measurements.

The 2017 national accounts, both scheduled for release on 24 November 2017 will incorporate a number of changes and new information:

- The timeliness of balanced national accounts has been improved by one year, with goods and service flows reconciled up to the March 2016 year. This will enable customers to have more up-to-date data for economic models and provide better information on the current growth of New Zealand's economy.
- Incorporating updated benchmark data from the Household economic survey (HES) will increase New Zealand household spending for the March years 2014 to 2017. The updated benchmarks will improve information about the mix of goods and services consumed by households for the March years 2014 to 2017.
- Updates of investment data for the 1999 to 2014 March years, reflecting a reallocation of investment values between the private and public sectors to be more consistent across the sector breakdowns. This will enable a more direct comparison between sector investment statistics in the National accounts (income and expenditure) release.
- New institutional sector account series, aligned to the latest Statistical Classification of Institutional Sector (SCIS). This update improves international comparability of institutional sector statistics.

GDP for the September quarter, scheduled for release on 21 December 2017, will reflect:

- Annual real and quarterly GDP methodology updates, including improvements to weighting methodology. This enables annual reweighting to a lower level, and reduces the size of revisions caused by periodic low-level re-weights.
- Updated nominal benchmarks derived from the annual national accounts, which includes updated industry benchmarks.
- A timelier introduction of industry benchmarks that will lead to four fewer quarterly measures of economic growth being based on short term indicators; taking the maximum number of quarters from 13 to nine.

Structure of the paper

Chapter 2 provides an analysis of the main improvements to national accounts and nominal GDP statistics:

- regular annual updates
- regular periodic updates
- updates particular to this year

Chapter 3 outlines the improvements to measures of quarterly economic growth in real terms. The improvements fall into two broad categories:

- annual benchmark updates
- methodology improvements

Chapter 4 highlights some consequential improvements of other statistics associated with the National Accounts. Namely, improved timeliness of:

- Tourism sector account
- productivity statistics
- regional GDP measurements

Chapter 5 is an overview of work planned for 2018 impacting the next annual national accounts release. This includes possible updates to overseas visitor expenditure and integrating national accounts statistics with financial flows and balance sheets.

2 Main improvements to national accounts statistics

This chapter provides a more detailed analysis of the main improvements to national accounts and nominal GDP statistics.

Overview of the national accounts and annual publications

National accounts (industry production and investment) provides comprehensive industry data on production, investment, and capital stocks. It focuses on industry data and the benchmarks for the nominal level of activity, which update and maintain the quality of quarterly production measure of GDP (GDP-P) statistics.

National accounts (income and expenditure) provides information on the national income available for spending and saving, in nominal terms. The release gives an insight into how saving is used and invested between different sectors of the economy. Income and expenditure items provide the basis of updated benchmarks for measuring quarterly expenditure measure of GDP (GDP-E) statistics.

Effect of improvements on nominal GDP

Table 1 below indicates the revisions we expect to nominal GDP with the release of *National accounts (industry production and investment): Year ended March 2016* and *National accounts (income and expenditure): Year ended March 2017*, both scheduled for release on 24 November 2017.

Table 1

Percentage revisions nominal GDP levels (indicative)				
Year ended March	**Total revisions to production GDP(P)**	**Total revisions to expenditure GDP(E)**	**Household expenditure contribution to GDP(E) revision**	**Gross fixed capital formation contribution to GDP(E) revision**
	Percent			
1972 to 2013	0.0	0.0	0.0	0.0
2014	+0.1	+0.1	+0.1	0.0
2015	+0.1	+0.6	+0.2	+0.3
2016	+1.2	+1.7	+0.9	+0.8
Source: Stats NZ				

The following sections of chapter 2 summarise the main factors behind these revisions.

Regular annual updates (new and updated annual nominal benchmarks)

Each year, we make regular updates to the most recent data in the annual national accounts. These regular updates generally reflect more accurate data becoming available in the underlying annual and sub-annual data sources that feed into the national accounts.

Annual benchmark updates are the result of applying the supply-use framework, which is a core part of the national accounts framework. The updates affect nearly all statistics published in the national accounts releases. The supply-use framework captures the flow of goods and services across the economy. The overall national accounts framework ensures that data and methodology updates are reflected in other components affected by the change. To apply the supply-use framework, we follow an extensive process to reconcile goods and service flows. We do this annually when the data becomes available.

The complete process reflects these additional data needs and the analysis required to interpret conflicting data sources. Due to a major improvement in the timeliness of industry data from the Annual Enterprise Survey, the reconciliation of goods and services flows can be completed earlier.

We also need a reconciliation process for financial flows, such as interest payments and receipts, in order to complete the picture of income and expenditure between sectors of the economy. We have information for the initial reconciliation of financial flows between sectors up to 2017.

Regular periodic updates

The annual national accounts are also updated to incorporate new data from periodic data collections. For example, detailed expenditure estimates from the Household Economic Survey (HES) are available every three years. This year's annual national accounts incorporate benchmark data from the 2016 HES.

Improved household expenditure data

New data for measuring household consumption expenditure (HCE) has become available, causing upward revisions to the level of HCE for the March years 2014 to 2016. Table 1 shows the impact of HCE revisions on the total nominal expenditure GDP levels, which ranges between +0.1 percent in the 2014 March year and +0.9 percent in 2016 March year.

The revisions were caused by updated data from the 2016 HES and other new data sources. The HES is a direct measure of spending by New Zealand households. Every three years annual HES data comes from a more extensive survey, while the years in between are modelled from other indicators. The new HCE data provides improved information about the mix of goods and services consumed by households for the March years 2014 to 2016.

Updates particular to this year

From time to time, we make specific improvements to the annual national accounts that reflect either improved methodologies, or to incorporate a new data source that enables more accurate estimates. The effect of the Canterbury earthquakes on economic activity is a good example of a phenomenon for which more accurate data becomes available over time.

Improved timeliness of annual nominal benchmarks

We will reconcile the goods and service flows occurring over the March 2015 and March 2016 year with the release of the 2017 National Accounts. We needed a complete reconciliation of two years of data to advance the timeliness of reconciled data. In a normal year, we update a previously balanced year plus one additional year of reconciled goods and service flows (ie balanced for the first time).

A timelier reconciliation means that data up to 2016 includes the complete structure of the New Zealand economy. We will maintain this improved timeliness. The 2018 release of the national accounts will update the reconciliation of the March 2016 year's data and balance the March 2017 year's data for the first time.

Improved investment data

Total investment in 2015 and 2016 will be revised upward in the 2017 national accounts. As shown in table 1 this is the second main cause of upward revisions in total expenditure GDP. The main type of investment affected is residential building Gross Fixed Capital Formation. New data measuring production activity of the construction and other related industries improves the data on building and infrastructure investment. Similar production activity data enables improved measurement of investment activity for other asset types. These improvements are an outcome of the goods and service flows reconciliation for 2015 and 2016 March years.

In 2016 we updated the data used to measure unconsented residential building construction arising from the Canterbury earthquakes, using housing insurance data. These adjustments continue in our 2017 release, extending the adjustment to 2016 and 2017.

As notified in National accounts (income and expenditure): Year ended March 2016 we suppressed market and non-market values for gross fixed capital formation and net capital stock for provisional years. This occurred at the central government, local government, and total economy sector of ownership levels. We supressed these series due to quality concerns around the coherence between the market and non-market sector of ownership series, and the institutional sector series. We have resolved our coherence concerns for our 2017 release, which has enabled us to lift this suppression.

For March years between 1999 and 2014 there is no revision to total investment, although there will be an update to the allocation of investment between the private and public sectors. This reallocation improves the coherence between the sector of ownership values in the capital stock tables and the values in the institutional sector accounts. For years between 1987 and 1998 we have not reviewed this methodology to improve the coherence with the historic government institutional sector accounts. The data for these years is partial, and is only available on Infoshare for a subset of the full institutional sector accounts. The updates of investment flows are also reflected in the capital stocks data, which provides an updated balance sheet view of the new sector breakdown.

Introducing the Statistical Classification for Institutional Sectors (SCIS)

The institutional sector accounts tables to be published in *National accounts (income and expenditure): Year ended March 2017* will be upgraded to reflect the new Statistical Classification for Institutional Sectors (SCIS).

The updated release will replace the existing institutional accounts sector tables in the previous release of national accounts (income and expenditure), which were based on the New Zealand Standard Institutional Sector Classification 1996 (NZISC96).

The new institutional sector classification is now fully aligned with the 2008 System of National Accounts (2008 SNA). Classifications become outdated over time as the economy evolves. The new classification reflects developments in a modern economy, particularly the financial sector. The upgrade reflects the current structure of sectors in the New Zealand economy and leads to improved relevance, and maintains international comparability.

Appendix 1 has further details about the new sector classifications and the effect on the institutional sector statistics.

Introducing the term 'mixed income' in the national accounts

The 'gross operating surplus' measure will be renamed 'gross operating surplus and gross mixed income' across all national accounts tables and series. There are no revisions to key national accounts indicators as a result of introducing this change.

The concept 'gross mixed income' has been introduced into the national accounts to provide greater insight into the breakdown of the existing 'Gross operating surplus' measure in the institutional sector account tables. Mixed income is possible in any industry or sector where there are working proprietors or unincorporated businesses.

Appendix 2 has further guidance on interpreting the new statistics.

3 Main updates to quarterly gross domestic product

This chapter outlines the improvements we made to the quarterly measures of economic growth.

Overview of quarterly GDP publication

GDP is New Zealand's official measure of economic growth. The production measure of GDP (GDP-P) refers to the volume of goods and services produced in the economy, while the expenditure measure of GDP (GDP-E) shows how these goods and services were used. We express quarterly GDP-P in volume terms only (with the effects of price changes removed), and we express GDP-E in both volume terms and current price terms.

This chapter describes changes we have made to data and methodology that will affect our estimates of GDP growth. More detailed analysis of the changes and the revisions to total GDP growth will be published in *Gross domestic product: September 2017 quarter*, to be GDP release on 21 December 2017.

Annual benchmark updates

Annual benchmark updates can have a significant effect on quarterly estimates of economic growth. The impact of structural changes and updated data result in revised growth rates, especially for the most recent periods as our quarterly growth estimates reflect more of the recent changes in the structure of the economy.

As a result of bringing forward the balancing of GDP-P and GDP-E current price measures by an additional year, we are currently incorporating two updated annual benchmarks:

- final balanced data for the March year ended 2015, previously not available, and
- provisional balanced data for the March year ended 2016, newly available.

Incorporating these years of balanced annuals into our GDP-P volume measures and the GDP-E expenditure components means that instead of the latest (up to) 13 quarters being based on short-term indicators, only the latest six to nine quarters will ever be based primarily on short-term indicators from now on. Note that some volume measures within GDP-P and GDP-E are not linked to a balanced annual.

Methodology improvements

In addition to updated annual benchmarks, we have continued removing lower level fixed weights throughout GDP-P industries and GDP-E expenditure components.

Removal of fixed weights

Removing fixed weights refers to introducing annual weight updates to aggregate volume series. While weights are updated annually when producing chain volume series, some lower level weights are not updated annually. Removing fixed weights allows more up-to-date current price weights at lower levels of our series to be brought in every year, which will better capture shifts in the structure of the economy.

Currently the base year price is from the March 2010 year. This means any volume series compiled with fixed weights uses this base year price, the same, fixed price (2010) throughout the time series. During rebasing (usually done every five years), this would be updated to another chosen year for the recent periods. This means that only every five years the relative current price weight of an industry is updated.

Since rebasing the quarterly GDP estimates from being expressed in 1996 prices to 2010 prices in 2014, we have been reviewing which GDP-P production industries and which GDP-E expenditure components have lower level weights and actively working to remove them. As we get further away from the base year price, the less relevant the March year 2010 weights become where there are fixed weights. When we re-express in five years' time, the economic picture could be quite different from what it was five years ago. The weights could have changed significantly over time. With the fixed weights removed, there would be no need to rebase every five years.

In 2016, we introduced chain-linking to replace fixed 2010 weights for lower-level series in the mining and business services on the production side of GDP, see Gross Domestic Product: September 2016 quarter. This year we have continued our programme of identifying and removing fixed weights by introducing chain-linking to replace fixed 2010 weights for lower-level series industries in the production side of GDP, particularly:

- retail and accommodation
- local government and
- unallocated taxes.

On the expenditure side of GDP, we removed the fixed weights in the following components:

- gross fixed capital formation – plant, machinery and equipment and transfer cost – and
- imports and exports

Quarterly gross domestic product: Sources and methods (fourth edition) has further information about chain-linking.

We will continue the programme of removing lower level fixed weights, lessening the need to periodically rebase the entire series to a new base year. GDP-P industries that we aim to review next year include agriculture, forestry and fishing, manufacturing, transport, finance and insurance, and health and other services. GDP-E expenditure components that we aim to review include investment in rail transport equipment, road transport equipment, weapon systems, and inventories. From this review we will determine the feasibility of removing fixed weights within these remaining components.

4 Improvements to associated statistics

This chapter highlights some other benefits from advanced timeliness of annual nominal benchmarks. These benefits are reflected in the following information releases.

Tourism Satellite Account: 2017

The release date has been rescheduled from 25 October 2017 to 13 December 2017 to incorporate timelier annual industry benchmarks for 2016. This will enable 2016 data to be implemented a year earlier than was possible with the original release date. By doing so, we will be able to provide much more up-to-date and detailed insights about the industries and products related to tourism.

Productivity statistics: 1978–2017

Bringing forward the years being balanced provides us with newer annual benchmarks to incorporate into our quarterly measures of economic growth. It also enables us to produce and publish more robust Productivity statistics by industry for the more recent periods.

Productivity statistics: 1978–2017 is scheduled for release on 22 February 2018. It will contain productivity statistics by industry up to at least 2016, based on the updated annual national accounts benchmarks. Previously, the 2016 estimates by industry would have been indicative and based on a limited range of available data. If it is feasible, we will even aim to extend the productivity by industry time series to 2017.

Regional gross domestic product: Year ended March 2017

GDP data at the regional level will also be improved with timelier nominal annual benchmarks. With the extra year's data available, the number of years based on provisional estimates will reduce from two to one. The next release will be derived from the reconciled national accounts data up to 2016 and provisional regional GDP totals for 2017. The enhanced regional data will be available with *Regional gross domestic product: Year ended March 2017*, scheduled for release on 21 March 2018.

5 Overview of planned work in 2018 effecting the national accounts

This chapter outlines some key elements next year's work programme that potentially affect the 2018 annual national accounts.

Possible updates from 2018 balance of payments data

The 2018 national accounts will incorporate any improvements to the measurement of international flows, via the balance of payments.

Preview of 2017 revisions to balance of payments and national accounts signalled updates of education exports and cruise ship visitor expenditure to be included in the 2018 balance of payments revision cycle. These data updates will be accounted for in next year's reconciliation of 2016 and 2017 goods and services flows.

In September 2017, the Ministry of Business, Innovation and Employment (MBIE) requested that Stats NZ undertake a review of the International Visitor Survey (IVS). This follows our 2015 review. Any recommendations arising from the new review will be taken into consideration in the operation of the IVS. The IVS provides measures of total international visitor expenditure that inform the measurement of travel credits and, indirectly, the estimation of domestic household consumption expenditure. The timing and scope of the review work are yet to be determined, however it is expected to be covered in the terms of reference to be publicised before the end of 2017.

Revisions to Reserve Bank's household balance sheet statistics

In the institutional sector accounts, household interest flows are estimated using data sourced from the household balance sheet published by the Reserve Bank. The Bank has released an updated household balance sheet that included revisions to the levels of households' deposits and holdings of debt securities.

Revisions to household balance sheet statistics (PDF) has further details.

These revisions to asset positions could be expected to lead to revisions in the associated interest income flows, as recorded in the household income and outlay account. However, they also imply a number of offsetting or counterparty revisions in the accounts of the other institutional sectors, given the need to balance sectoral flows across the economy.

We are still working on understanding and better measuring the redistribution of deposits and debt securities to the other institutional sectors. As a result, we have decided to delay adopting these revisions in this year's institutional sector accounts. This will avoid introducing revisions for only one of the institutional sectors that may require further amendment once a comprehensive picture has been obtained. Instead we will continue our existing methodology by sourcing the former Reserve Bank series to estimate household interest income, for the year ended March 2017. We will continue our work on how to consistently apply these revisions to all institutional sectors for our next releases. We are also working through the impact of these revisions on other products like the annual balance sheets.

Further work to reconcile annual institutional sector accounts and balance sheets

In March 2017, Stats NZ published annual balance sheets by institutional sectors. This new balance sheet information is part of a project to fill gaps in New Zealand's current suite of national accounts. While attempts are made to maintain consistency between the provisional balance sheets (stock measure) and the institutional sector income and outlay accounts (flow measure), further work is needed to fully reconcile these currently independent outputs. The March 2017 release of balance sheet statistics was the first stage of a four stage improvement to our national accounts. Further stages, especially those relating to greater coherence between stock/flow measures and balancing counterparty positions are still to be undertaken and will result in changes to both the balance sheet statistics and related institutional sector accounts.

Revisions to estimates of GST in the Tourism Satellite Account (TSA)

Upward revisions to GST will be incorporated into the 2017 release of the Tourism Satellite Account, backdated to 1999.

Preliminary work indicates that when the full review of GST rates is completed, the net impact should not lead to substantial revisions to total GST on production, or on HCE for the 2018 release.

Appendix 1: Statistical Classification for Institutional Sectors (SCIS)

Differences between 2008 System of National Accounts (SNA) and the Statistical Classification for Institutional Sectors (SCIS)

The SCIS aligns with 2008 SNA overall; although there are slight divergences, as outlined below.

- The definition of unincorporated business is consistent with 2008 SNA. However, because self-employed people are required to keep detailed tax accounts for tax purposes in New Zealand, they can be treated as if they were incorporated and included in the business enterprise sectors; in many countries they are classified to the household sector.
- A 2008 SNA definition of social security schemes is broadened to include social insurance schemes.
- Money market funds and investment funds are combined into one subsector in SCIS, as money market funds are not common in New Zealand.
- The control dimension is separated into a linked control classification rather than being embedded within the sector classification, as in 2008 SNA.

The 2008 SNA concepts and definitions are adopted in every other case.

Comparing NZISC96 and SCIS

Comparing the New Zealand Standard Institutional Sector Classification 1996 (NZISC96) and the Statistical Classification for Institutional Sectors (SCIS) outlines the changes.

Revisions to published statistics

While these improvements will lead to revisions to sectoral distribution of income and expenditure, they are not expected to be significant and to change the previously published economic picture. The updated tables and data series is designed to maintain time series consistency with the previously published sectoral breakdown.

Here is a summary of the key changes to our published statistics:

- Creating a new subsector for non-profit business enterprises (SCIS 131).
  We will be releasing subsector-level information to help identify non-profit enterprises that serve business enterprises. Although these units cannot distribute profits, they support the activities of market business units. In NZISC96, these institutional units were usually spread across the Private producer enterprises sectors (NZISC96 111, 121), Central government enterprises sector (NZISC96 131), and Local government enterprises sector (NZISC96 132).

- Re-classifying Financial auxiliaries (SCIS 271)
  NZISC96 diverged from 2008 SNA because financial auxiliaries were not included in sector 2 'Financial intermediaries', as it had a narrower definition of financial intermediaries which did not include financial auxiliaries. This change brings the SCIS in line with the broader concept of the 2008 SNA. In NZISC96, most units in this subsector were classified to Private producer enterprises sectors (NZISC96 111, 121), Central government enterprises sector (NZISC96 131), and Local government enterprises sector (NZISC96 132).

- Re-classifying Captive financial institutions (SCIS 281).
  This subsector consists of institutional units providing financial services, where most assets or liabilities are not transacted on open financial markets. NZISC96 diverged from 2008 SNA because captive financial institutions were not included in sector 2 'Financial intermediaries', as it had a narrower definition of financial intermediaries which did not include captive financial institutions. This change brings the SCIS in line with the broader concept of the 2008 SNA. In NZISC96, most units in this subsector were classified to Private corporate producer enterprises sector (NZISC96 111), Central government enterprises sector (NZISC96 131), and Local government enterprises sector (NZISC96 132).

In addition to the above, there are some notable changes under SCIS to align the classification to SNA 2008. These changes are mainly re-classification of units within the broader published 'Financial business enterprises' sector (SCIS sector2) and do not affect published aggregates.

- Creating a new subsector for investment funds (SCIS 231).
  Investment funds are collective investment schemes that raise funds by issuing shares or units. In NZSISC96, these institutional units were combined with other depository organisations and were classified to depository organisations (NZSIC96 222).
- Splitting out insurance and pension funds.
  Insurance corporations (SCIS 251) and Pension funds (SCIS 261) are now separate subsectors under SCIS, consistent with 2008 SNA recommendations. In NZISC96 these units were classified to the same subsector, Insurance and pension funds (NSISC96 241).

The following NZISC96 published tables will be directly affected as a result of adopting SCIS:

Table	Name	NZISC96
2.1	Producer enterprises sector accounts	111, 112, 121, 131 and 132
2.2	Private corporate producer enterprises and producer boards sector accounts	111 and 121
2.3	Private non-corporate producer enterprises sector accounts	112
2.4	Central government enterprises sector accounts	131
2.5	Local government enterprises sector accounts	132
2.6	Financial intermediaries sector accounts	211, 221, 222, 229, 231, and 241

No significant revisions to the remaining sectors – General, Central and Local Government, Private non-profit organisations serving households, Household, and Rest of world, are expected as a result of adopting the updated classification.

Change to national accounts (income and expenditure) - institutional sector accounts tables has information on the new suite of institutional sector accounts tables, downloadable csv files and Infoshare series identifiers.

Appendix 2: Guidance with interpreting the significance of mixed income

Adding the concept ‘gross mixed income’ to the institutional sector accounts is mainly a change in the way we present the distribution of operating surplus of business enterprises. This change in presentation allows us to align our data with the System of National Accounts 2008 while closely reflecting the structure, income generation, and distribution mechanisms of household-owned businesses in the New Zealand economy. There are no revisions to key household income indicators or household saving as a result of introducing this change.

In the 2008 SNA, the decision to classify ‘non-corporate businesses’ (Sector 121 in Stats NZ’s SCIS classification) as ‘quasi corporates’ implies by definition that their operating surplus is not ‘mixed’, as for corporate entities it is not supposed to include any labour income. The reality in New Zealand is different, as the operating surplus of non-corporate businesses such as sole proprietors and partnerships is recorded. This is a mix of payments for both labour and capital, which is the definition of mixed income.

The same principle applies with the operating surplus of ‘corporate business enterprises’ (SCIS 111). In New Zealand we recognise that the institutional category, ‘corporate business enterprises’ includes units such as closely-held companies that behave similarly to non-corporate business enterprises. This clearly applies to the payments they make via salaries to their working proprietors and shareholder employees. In practice this means that even corporate operating surplus contains an element of mixed income from working proprietors’ salary and wages.

To accommodate this change, the existing ‘gross operating surplus’ measure, has been renamed ‘gross operating surplus and gross mixed income’, which is the total of ‘gross mixed income’ and a new pure ‘gross operating surplus’ measure.

Central and local government units, private non-profit units, and owner-occupied households will not generate any mixed income. This will be identified through appropriate footnotes in our tables.