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STATISTICS DIRECTORATE
COMMITTEE ON STATISTICS

Working Party on National Accounts

IMPROVING NEW ZEALAND'S MACRO-ECONOMIC ACCOUNTS: METHODOLOGICAL AND CONCEPTUAL REVIEWS

Joint meeting

To be held on 1-2 October 2013
OECD Conference Centre
Beginning at 2:00 a.m. on the first day

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Improving New Zealand's macro-economic accounts: Methodological and conceptual reviews

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New Zealand Government

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1 Introduction to macro-economic accounts changes

Purpose of paper

This paper introduces improvements we are making to New Zealand's macro-economic accounts, which consist of national accounts and balance of payments.

International standards have been updated to reflect the changing information needs of modern economies. New Zealand's macro-economic accounts will be upgraded in 2014 to reflect updated methodologies and concepts.

We introduce macro-economic accounts improvements, outline the scope of the changes and when they will occur, and outline the reasons for the changes in international standards. As the process progresses, we will report further on the expected affects from the upgrades.

What are the improvements?

There two main aspects of the upgrades we are making to our macro-economic accounts are to:

- maintain international comparability by being consistent with updated international standards
- update the lower level price weights used for volume measurements.

These upgrades will meet the changing information needs for our modern economy, and lead to improved relevance and maintain international comparability. The statistics will also take account of changes in the structure of New Zealand's economy. While these improvements will lead to revisions to headline gross domestic product (GDP) quarterly growth rates and most other statistics within the national accounts and balance of payments, they are not expected to be significant and to change the previously published economic picture.

Updated international standards

The national accounts and balance of payments are based on international standards that have been agreed to, published and promoted by international agencies, the UNO, IMF, World Bank, OECD and Eurostat. Periodically the standards are revised to reflect new agreements on long-standing aspects and responses to changes that emerge within global economies. Two recent updates are:

System of National Accounts 2008 is the latest version of the international statistical standard for the national accounts, adopted by the United Nations Statistical Commission.

Balance of payments and international investment position manual (6th edition) is the accepted standard framework for statistics on the transactions and positions between one country's economy and the rest of the world.

Updated price weights

The key price weights used to aggregate the national accounts volume measures are updated annually when producing the chain volume series. There are however some lower level series where the price weights are not updated annually. An extensive update of these lower level price weights will be undertaken. This is termed a rebase, and is required to fully reflect changes to the structure of the economy. These updates will affect volume measurement levels and growth rates. The revisions to growth rates however, are not expected to be significant as key weights are updated annually when producing the chain volume series.

When will the improvements occur?

We have started the process of implementing these upgrades to New Zealand's macro-economic accounts. They will be reflected in the following releases:

- *Balance of Payments and International Investment Positions: June 2014 quarter* (to be released in September 2014)
- *National Accounts (Industry Benchmarks): Year ended March 2012* (to be released in November 2014)
- *National Accounts (Income and Expenditure): Year ended March 2014* (to be released in November 2014)
- *Gross Domestic Product: September 2014 quarter* (to be released in December 2014).

We will be coordinating revisions due to the upgrades with the usual annual revisions cycle. All series will be backdated to the beginning of the time series as relevant. For the national accounts and GDP the annual cycle updates data sources and reconciles total GDP through the supply-use balancing process. The supply-use balancing process improves coherence of the macro-economic statistics through reconciling the production, expenditure, and income components of GDP. The balance of payments annual revisions cycle is integrated with the supply-use balancing process and updates data sources.

Scope of the implementation process

When we implement the changes to our statistics we will only be upgrading the current set of macro-economic accounts published by Statistics NZ. Financial accounts and balance sheets, which are part of the international standards, are not produced as part of New Zealand's national accounts and so are not included in the planned upgrade.

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2 Changes to the international standards

Here is a summary of the new features of the updated international standards that will impact on the accounts published by Statistics NZ. These new features fall into three major categories:

- assets
- the financial sector
- globalisation and related issues.

Assets

The most substantive change to the international standards is the expansion of the asset boundary to include a number of new types of assets. This is to better reflect that we are dealing with durable items that are not consumed but continue to provide a flow of capital services.

The specific changes in asset recognition are as follows.

Research and development

The most predominant new type of asset is research and development. The inclusion of research and development investment reflects the increasing importance of intangible assets, which are termed as intellectual property products within the standards. These types of assets are often seen as a hallmark of a modern economy.

Some countries have measured research and development investment values, or have indicated the expected increase in GDP as a result. The impact on the New Zealand accounts will be at the lower end of the range. This is because New Zealand's total expenditure on research and development is considerably lower than the OECD average as a proportion of total GDP. Also the impact on GDP is far lower from research and development expenditure within non-market sectors, such as research conducted within universities, because we have already recorded much of this type of expenditure as government final consumption expenditure. The majority of research and development expenditure in New Zealand occurs in the non-market sector.

Cultivated assets

Cultivation of some assets is treated as investment in the international standards. This type of asset is the animal or plant resources that yield repeat products. In the current context of the New Zealand economy, the most significant type of assets that meet this definition is expected to be dairy cattle. Other classes of livestock such as beef breeding stock yielding animals for slaughter and sheep yielding wool and lambs for slaughter would also be included. In practice correctly treating dual purpose livestock is difficult and investigations are continuing in this area.

Dairy cattle and other livestock are currently treated as inventory items for sale. The impact of changing this would be to increase industry output and value added levels. The increase would arise due to deaths of livestock no longer being deducted from output.

Recognising cultivated assets is consistent with the updated standards, although this treatment is also consistent with current standards. Data availability and quality issues have prevented this update from occurring previously and further investigations are required to confirm that this change can be made.

Weapons systems

Weapons delivery systems, such as fighter aircraft or tanks, are currently treated as an expense. Under the new standards, this expenditure will be treated an investment, which will lead to increased GDP because of increased values of consumption of fixed capital (CFK) within general government.

However, expenditure on weapons systems by the New Zealand armed forces is small, so the effect on overall GDP is not expected to be great.

Valuation of assets produced in-house

Assets produced in-house are often measured as the sum of the cost of inputs used in the asset production process as there are often no market prices available. The updated standards have revised the recommended valuation method to also include capital services in the costs. An example of this situation would a farmer constructing fences using post-hole boring machinery. The cost of fence construction will need to include the machinery CFK and a rate of return on the investment in the machinery. The rate of return reflects the cost of funds used to invest in machinery.

This update will raise the level of investment and GDP. In recent periods, the impact is expected to be small. However, there may be a larger impact in the pre-1990 period when a significant amount of government construction was undertaken by internal agencies (eg Ministry of Works Department, NZ Rail, NZ Post Office, and local authority roading and construction units.

Financial sector

The standards have been updated to reflect developments in one of the fastest changing segments of many economies. The specific changes relating the financial sector are as follows.

Service fees on non-life insurance

The new standards take account of the longer term view of claims behaviour, and exceptionally large claims such as those following an irregular or exceptional event. The new treatments resolve some of the previous problems, such as negative services and erratic time series. We are reviewing the methodology used to calculate insurance service charge in the macro-economic statistics. We expect the review to lead to some revisions to previously published data, though the magnitude of the revisions is expected to small.

Unfunded pension schemes

The new standard recommends a revised treatment of defined benefit employer pension schemes whereby the true liability of the employers will be recorded, and matched by a household pension asset, whether or not the schemes themselves may be over or under funded. This treatment applies to both funded and unfunded schemes. For New Zealand, the major impact will come through revising the treatment of the Government Super Fund: the full recording of the evolution of the employer liability will lead to higher household saving offset by a fall in government saving. This change has no impact on GDP.

Investment funds

There is a change in the treatment of retained earnings of investment funds. These include collective investment schemes such as mutual funds and unit trusts. Retained earnings of investment funds are earnings that are not distributed to unit holders and are kept by the fund instead. They add to the funds equity and its liabilities to the unit or shareholders.

The retained earnings of the funds will now be attributed to unit or shareholders who are then deemed to reinvest them back into the funds.

Under the existing method, the retained earnings is recorded as a revaluation of the investment and the savings attributed to the fund, rather than the investors. The change in treatment will bring this recording in line with the treatment applied to other collective investment schemes such as life insurance and pension funds where all earnings are attributed to the beneficiaries.

Globalisation and related issues

The updated standards have taken into account the continuing emergence of cross-border manufacturing and merchanting operations. The specific changes are outlined below.

Cross-border manufacturing and merchanting operations

The revised standard adopts a consistent ownership principle when recoding international transactions. The flows associated with cross-border manufacturing will now be recorded on a strict economic ownership basis. The ownership of the materials flowing into the manufacturing process and the ownership of the final product determines whether entries for goods or services are recorded. Where only value added is provided in the manufacturing process with no change in ownership of the goods then a service fee is to be recorded.

Under the existing methodology, an ownership change is imputed for the flow of these goods and the value added in the manufacturing process is recorded implicitly in the goods account for the economies concerned. We plan to implement this particular change in 2015 when we expect there will be a full set of information is available.

Merchanting refers to those situations where a resident entity purchases and sells goods offshore without them entering the resident's domestic territory. These flows will now be recorded on a strict ownership basis, which will see the products being recorded in goods flows, whereas previously only the merchanting margin was recorded as a service.

The current account balance will remain unchanged as a result of the above changes. However, there will be changes in the aggregate levels of the good and services.

Transfer of wealth through migration

Migrants' transfers represent the net wealth of individuals who migrate. Currently, the wealth 'transfer' is recorded as a transaction or flow in the external accounts. The new treatment will see the wealth transfer recorded as an 'other change' in the balance sheet, and not as a flow. The rationale for this change is that the ownership of the wealth does not change when people change their residency.

3 Impact from upgrading price weights within the volume measurements

There are two main effects on national accounts volume measures as a result of following international best practice:

- changed growth rates from an update of lower level price weights
- changed levels from expressing volume measures in the prices of a more relevant year.

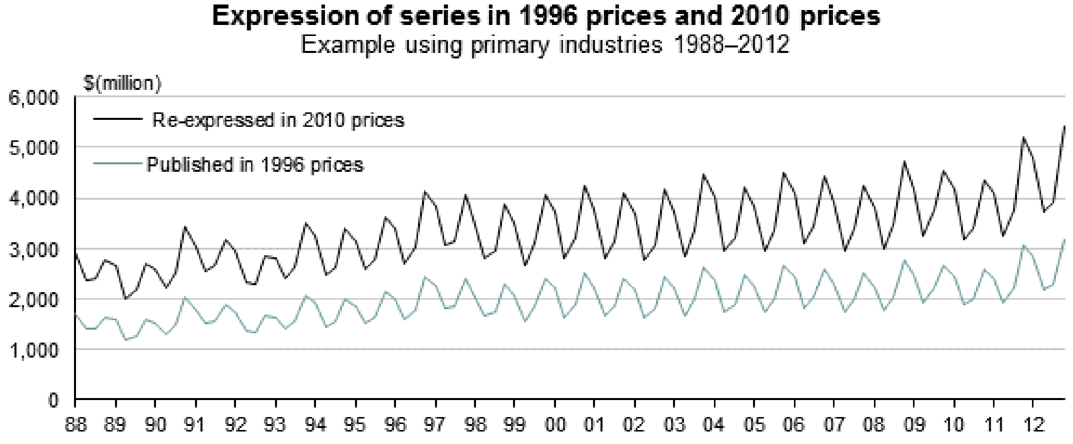
Updating lower level price weights

While key price weights are updated annually when producing the chain volume series, some lower level weights are not updated annually. Extensive updates of these lower level price weights may lead to further changes to growth rates of national accounts and GDP volume measurements. However, since key weights are updated annually the expected impact on headline measures is expected to be small. Price weights are used to aggregate the volume estimates and these are updated to account for structural changes in the economy.

Changed levels from an updated expression year

The chain volume measures of GDP and gross domestic expenditure are expressed in 1996 prices. In the updated national accounts this will change to being expressed in the prices of a more relevant year. It is most likely that the volume measures will be re-expressed in 2010 prices. The re-expressing of the volume measures will change levels but will not in itself contribute any changes to growth rates.

The benefit of an updated reference year is that for the latest years the gap between the GDP and gross domestic expenditure levels will be narrowed, which will assist analysis of the chain volume series. The graph below illustrates the change in levels as a result of only re-expressing from 1996 prices to 2010 prices, using the primary industries as an example.



Source: Statistics New Zealand