MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

# Technical paper: Impact of changes in 2015 Tourism Satellite Account on 2015 Regional Tourism Estimates

Sector Trends – 20 November 2015

The Regional Tourism Estimates (RTEs) use data from the Tourism Satellite Account (TSA) to produce annual estimates of tourism spending, across areas and products, that are consistent with the total spent on tourism provided by the TSA to the System of National Accounts.

**Statistics NZ revised the TSA methodology for 2015,[1] requiring us to adjust the RTEs accordingly.** This document outlines the reasons behind the adjustments, and how we have implemented them. These details are also relevant for the future re-engineering of the Regional Tourism Indicators (RTIs) in to the Monthly Provisional Regional Tourism Estimates (MPRTEs). The MPRTEs are scheduled for release in 2016.

**Changes to the TSA in 2015 have increased estimated spending across all Regional Tourism Organisations, across almost all years covered by the 2015 RTEs.** Changes to the International Visitor Survey (IVS) result in slightly lower estimates of recent international spending. As in previous years, these changes mean **the estimates for 2009-2014 in the 2015 RTEs should not be compared to estimates for the same period published 2014 and prior.**

## WHY THE REGIONAL TOURISM ESTIMATES NEED THE TSA

The electronic card transactions data provided by the RTIs only captures a fraction of all tourism expenditure, so the calculation of the RTEs uses a methodology commonly used in surveys to “weight up” to a target population. In this, the total spending estimated by the RTEs is fitted to match the TSA total, and RTE estimates by product match to the tourism product totals published in the TSA. The international side of the RTEs also uses International Visitor Survey (IVS) data to adjust electronic card spending data for differing propensity to use credit cards for different countries of origin, before weighting up to the TSA total.

TSA publishes data using a **product** concept, because most users prefer to think of tourism in terms of products purchased rather than the industries of merchants where purchases occur.

The RTIs (which provide our key source data for the RTEs) disaggregate by **industry** because the original data source records the merchant where a transaction occurs, not the product purchased. In order to align these transactions to particular TSA products, we create a set of concordances based on Statistics NZ’s established mapping between industries and products.

The general process of using these concordances is:

1. MBIE receives RTI data on spending aggregated by industry.
2. MBIE maps this tourism activity reported by industry to tourism products as reported in Table 8 of the TSA.

[1] http://www.stats.govt.nz/browse_for_stats/industry_sectors/Tourism/tourism-satellite-account-2015/Appendix_2_Methodology.aspx (See under “1. Household domestic travel expenditure”)

3. MBIE weights up the spending activity reported in the RTIs to the total spend reported for each product in Table 8 of the TSA.

Full details of this methodology are available on our website.[2] The methodology has not changed in 2015, but changes to the TSA itself have a flow-on effect on the RTEs.

## HOW THE TSA CHANGED IN 2015

The main changes to the TSA in 2015 that affect the RTEs are:

1. Changes to estimates of domestic spending due to the introduction of a new measure, the Household Tourism Expenditure Estimates
2. Changes to estimates of international spending to reflect revisions to the IVS
3. Changes to tourism product categories, requested by MBIE, to provide greater detail to stakeholders

These modifications have resulted in changes of demand across the different tourism product types and the types of tourists, across all the years of TSA data we use to create the RTEs. As the TSA serves as the basis for creating the RTEs, these changes flow through to adjustments in the calculation of the RTEs.

For example, in 'Accommodation services' (see Figure 1 below) comparisons with the previous release of the TSA show an increase in the demand for 'Business & Government', while 'Household' tourism demand has decreased across the series. 'International' demand appears to have changed little across the series.

It is important to note that our construction in the RTEs of the 'Accommodation services' product did not change since the last TSA release, so any adjustments to RTE estimates for this product are driven by the first two changes in the TSA listed above.

Apart from the two changes to the TSA spending levels driven by different TSA methodology and inputs, the RTEs project asked for the following changes to tourism product categories:

- Two completely new product categories: "Cultural, recreation and gambling services"; "Retail sales - alcohol, food, and beverages". These were formerly included in "Other tourism products".
- Allocate "Tyre retailing" to "Retail sales - fuel and other automotive products" to match with Statistics NZ's standard methods.

[2] See the methodology paper at: http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/regional-tourism-estimates/about-the-rtes

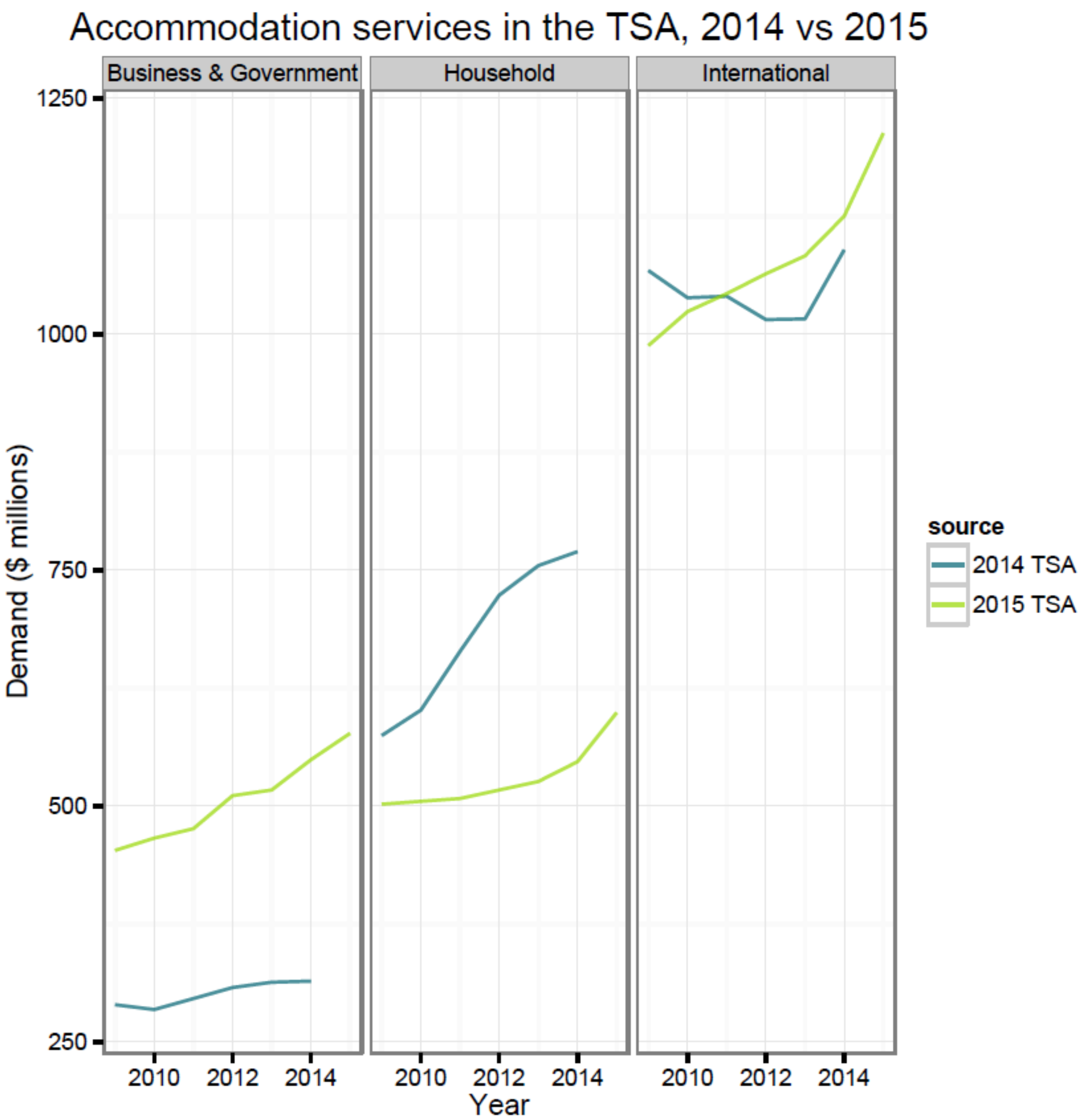


**Figure 1.** A comparison of how levels of spending changed for the Accommodation Services product between the 2014 and 2015 Tourism Satellite Accounts.

## WHAT WE ADJUSTED IN THE RTES

### Adjustments due to revised levels of domestic spending in TSA

Increases in spending levels across all TSA product categories dictate increases in spending estimated by the 2015 RTEs across all Regional Tourism Organisations (Figure 2). The revisions are larger in the main tourism destinations because the increase in domestic spending in the TSA is distributed according to the existing mix of destinations: larger destinations gain more.

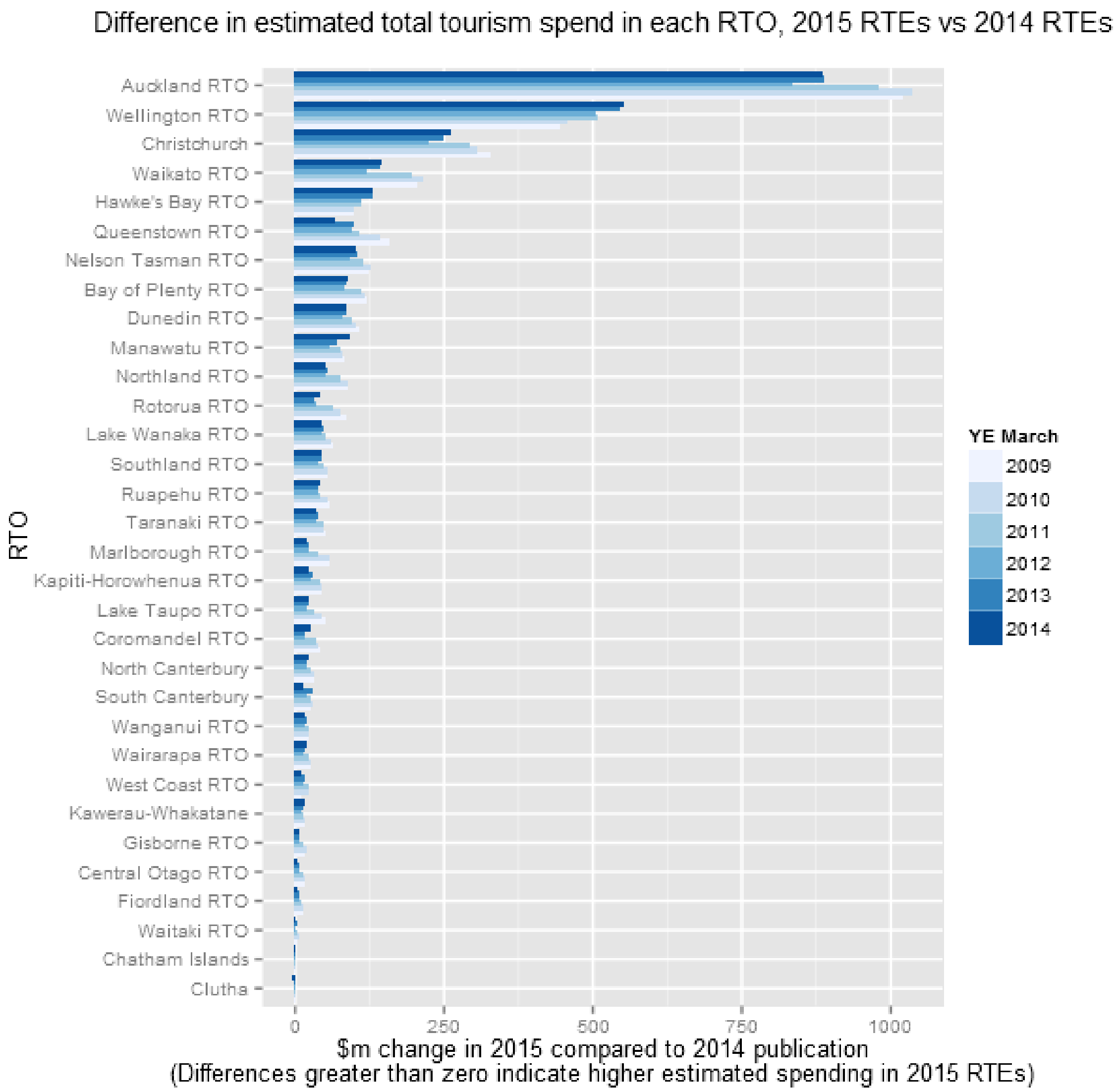


**Figure 2.** A comparison of estimated spending in the 2015 RTEs vs the 2014 RTEs, by Regional Tourism Organisation (RTO) destination, for 2009-2014. The 2015 RTEs estimate higher spending across all RTOs and years (except Waitaki RTO in 2012), due to increases in spending in the Tourism Satellite Account.

The changes to domestic spending levels in the TSA also affect the 2015 RTEs estimates of spending by product, even when we use the 2014 RTEs product categories. Figure 3 shows that TSA revisions to 'Other passenger transport' increase 2015 RTE estimates of domestic spending by between 1.75 and 2 times across a representative selection of regional councils. Note that the effects of TSA revisions on the regional distribution of RTE-estimated spending are greater for the residual categories of 'Other tourism products' and 'Retail sales - other'.

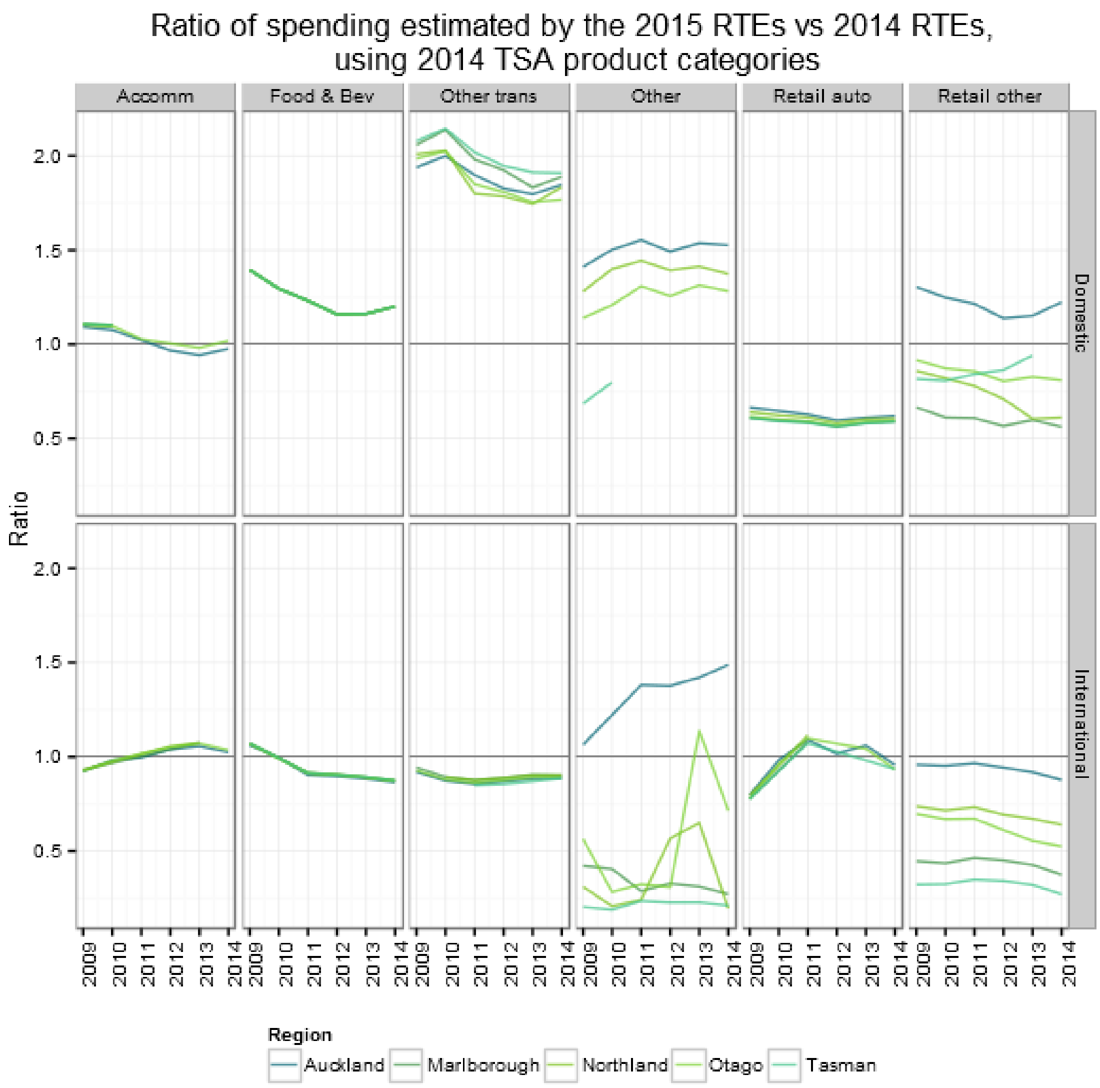


**Figure 3.** A comparison of how the 2015 and 2014 RTEs differ in their estimates of spending across the 2009-2014 product categories, for selected regions. In this figure, a value of 1 (grey horizontal line) indicates no difference between the versions of the RTEs; a value greater than 1 indicates larger estimates in 2015 RTEs; less than 1 indicates larger estimates in 2014 RTEs.

## Adjustments due to revised levels of international spending in TSA

Also according to Figure 3, as the 2015 TSA reported lower international demand for the ‘Other passenger transport’ product than the 2014 TSA, the effect on the international RTEs is opposite to the domestic: slightly lower estimates of spending in the 2015 RTEs. The noisier data on ‘Other’ products leads to the same divergence across regions as in the domestic RTEs.

Figure 4 shows the impact of changes to the TSA international demand figures. The 2015 RTEs estimate slightly lower international spending for 2012-14 than was estimated in previous years. Lower estimates for 2014 are due to changes in outlier detection in the International

Visitor Survey, which resulted in approximately $250 million less IVS-estimated spending entering the 2015 TSA than entered in 2014.[3] This translates directly to lower 2014 estimates in the 2015 RTEs.

The much smaller changes for 2012-13 are due to a separate revision by Statistics NZ of the product split, which led to small changes in total tourism that could be allocated to regions.

**Note that these decreases in estimated international spending are outweighed by the increases in domestic spending driving the increases across RTOs shown above.**

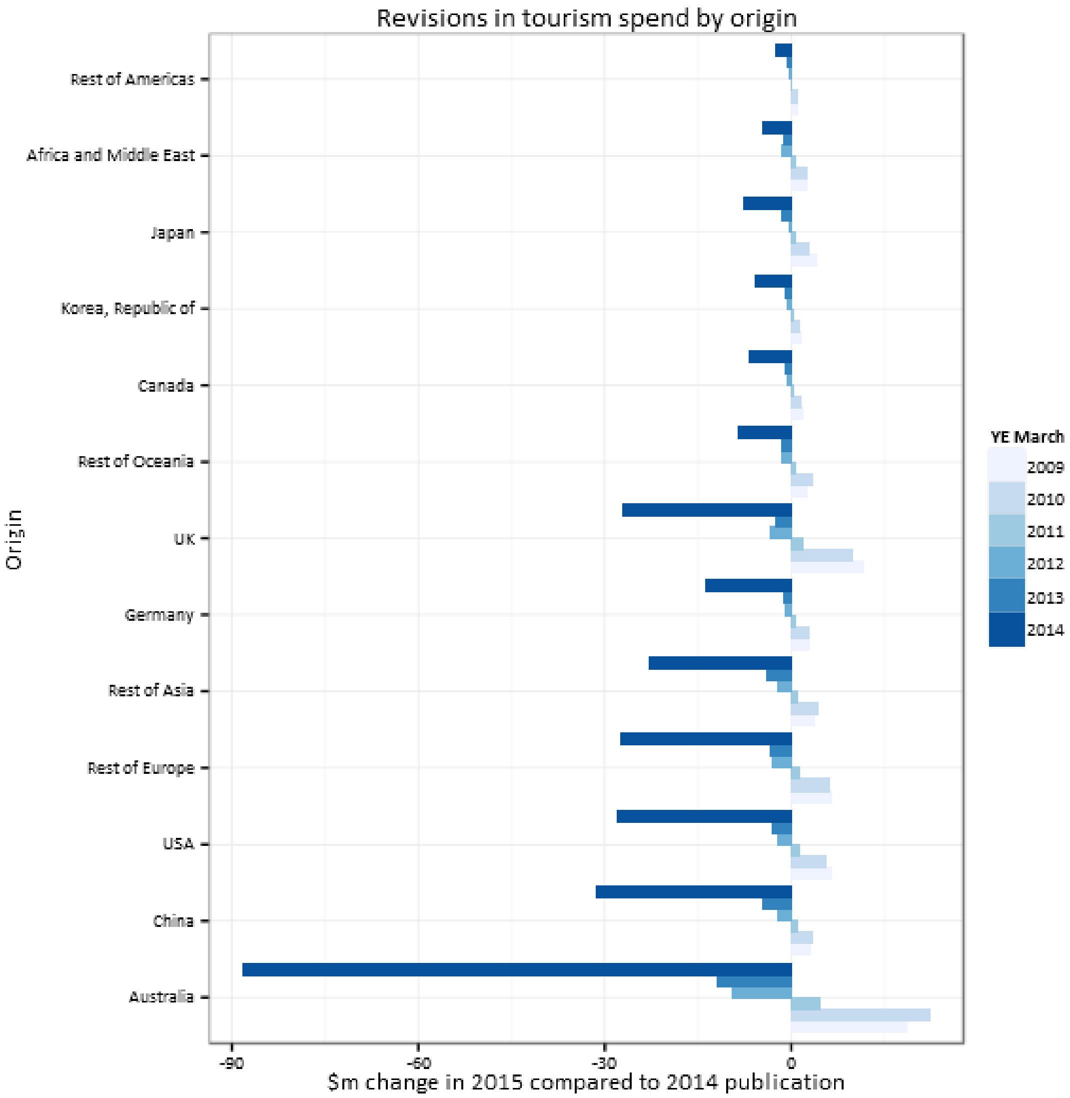


**Figure 4.** The 2015 RTEs estimate lower international spending for the period 2012-14 than did the 2014 RTEs. This is due to changes in outlier detection in the International Visitor Survey, which affected the TSA between the 2014 and 2015 RTE releases, and to small changes in the TSA product split.

[3] This change was introduced to the IVS in 2014 Quarter 4. More information is available on the MBIE website here.

## Adjustments due to revised tourism product categories in TSA

The table below outlines the adjustments to the product categories in the 2015 RTEs. In some cases these were made to match existing Statistics NZ practice for the TSA, in others they were joint decisions by MBIE and Statistics NZ to disaggregate product categories that had become too "catch-all" in the RTEs and other information products using the RTEs.

As emphasised in the analysis above, the major differences to 2009-2014 estimates between the 2015 and 2014 releases of the RTEs are driven by changes in the TSA. The differences due to adjustments in product categories are minimised (see Figure 3) because our methodology still weights up to the same total international and domestic demand levels in the TSA.

Figure 3 shows that removing part of 'Other tourism products' to form two new products had the expected effect of increasing regional variation in this residual category.

| 2015 RTE product | 2014 RTE product | Commentary on adjustments |
|---|---|---|
| Accommodation services | Accommodation | Only label adjusted, to match the TSA product |
| Cultural, recreation, and gambling services | (Included in "Other tourism products") | Disaggregated to improve RTE accuracy |
| Food and beverage serving services | Food and beverage serving services | No adjustment |
| Other passenger transport | Other passenger transport | No adjustment |
| Other tourism products | Other tourism products | Label unadjusted, but now excludes spending that was moved to two new products. As in previous years, the TSA product "Imputed rental on holiday homes" is included here. |
| Retail sales - alcohol, food, and beverages | (Included in "Other tourism products") | Disaggregated to improve RTE accuracy |
| Retail sales - fuel and other automotive products | Retail sales - fuel and other automotive products | Tyre retailing moved here from "Other tourism products" to match TSA treatment of same |
| Retail sales - other | Retail sales – other | No adjustment |