Australian Government
Productivity Commission

# Trade & Assistance Review 2015-16

## Methodological Annex

## Estimation Framework, Coverage and Re-benchmarking of Estimates

### An appropriate reference for this publication is:

Productivity Commission 2017, *Methodological Annex: Estimation Framework, Coverage and Re-benchmarking of Estimates, Trade & Assistance Review 2015-16,* Canberra

### Publications enquiries

Media and Publications, phone: (03) 9653 2244 or email: maps@pc.gov.au

### The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission's website (www.pc.gov.au).

# Contents


**Abbreviations and explanations** **iv**

**1 About this annex** **1**

**2 Overview of the Commission’s assistance measurement system** **3**

2.1 Coverage of assistance instruments 3

2.2 Classification of assistance 4

2.3 Estimation procedures 7

2.4 Types of assistance measures 8

2.5 Interpretation 9

**3 Coverage of assistance estimates, classification and quantification** **11**

3.1 Tariff assistance 11

3.2 Budgetary assistance 15

3.3 Estimates of combined assistance 22

**4 Re-benchmarking the Commission's assistance estimates** **29**

4.1 Updating the underlying input-output data to the ABS 2013-14 tables 29

4.2 Modifications to ABS input-output data 29

4.3 Updating import data to 2013-14 33

4.4 Tariff rate data — services sector adjustment 35

4.5 Coverage of budgetary assistance estimates 36

4.6 Combining tariff and budgetary assistance estimates — conversion to constant dollar basis 50

4.7 Impact on the effective rate of combined assistance from changing import, budgetary assistance and input-output data 52

**References** **55**

# Abbreviations and explanations

## Abbreviations

| | |
|---|---|
| ABARE | Australian Bureau of Agricultural and Resource Economics |
| ABS | Australian Bureau of Statistics |
| ANZSIC | Australia and New Zealand Standard Industrial Classification |
| ASEAN | Association of Southeast Asian Nations |
| AVAF | assistance to value adding factors |
| AVO | assisted value of output |
| BO | budgetary outlays |
| cif | cost, insurance and freight |
| CRC | Cooperative Research Centres |
| CSIRO | Commonwealth Scientific and Industrial Research Organisation |
| DFA | direct financial assistance |
| ERA | effective rate of assistance |
| FI | funding of intermediaries |
| fob | free on board |
| GSE | gross subsidy equivalent |
| GVA | Gross Value Added |
| IBI | initial benefiting industry |
| IC | Industry Commission |
| IOIG | Input-Output Industry Group |
| IOPC | Input-Output Product Classification |
| NRM | nominal rate of assistance on materials |
| NRO | nominal rate of assistance on outputs |
| NSE | net subsidy equivalent |

| | |
|---|---|
| NTNM | non-traded non-material inputs |
| PC | Productivity Commission |
| PTAs | preferential trade agreements |
| R&D | research and development |
| TCS | Tariff Concession System |
| TE | tax expenditures |
| TEM | tax equivalent on materials |
| TES | Tax Expenditure Statement |
| TIDES | Tariff and Import Database and Estimating System |
| UVA | unassisted value added |
| UVM | unassisted value of materials |
| UVO | unassisted value of output |

# 1 About this annex

Under its establishing Act, the Productivity Commission is required to report annually on industry assistance and its effects on the economy. As part of fulfilling this function, the Commission publishes quantitative estimates of assistance to Australian industry each year in its *Trade & Assistance Review*. Quantifying industry assistance helps to show who is advantaged and who is disadvantaged by industry assistance and can enable governments to make better informed policy decisions, potentially leading to improvements in the allocation of the community's scarce resources and, through this, improve community welfare.

The Commission and its predecessors commenced publishing assistance estimates in the early 1970s. The estimates initially focused on the main forms of import protection for the manufacturing sector and domestic marketing arrangements for agriculture. Over time, the coverage has been expanded to include a broader range of measures, most notably budgetary outlays and tax concessions.

The Commission's estimates have been derived in several 'series', each spanning a number of consecutive years. Each series retains a common methodology, coverage of measures and data sources across those years.

In *Trade & Assistance Review 2015-16*, the Commission published the first of a new series of assistance estimates (PC 2017). The new series is called the '2013-14 series' to reflect the underlying Australian Bureau of Statistics (ABS) input-output data used to benchmark the estimates.

This Methodological Annex describes the new series, providing details of the changes made and information to assist the interpretation of the estimates.

Chapter 2 provides an overview of the Commission's assistance measurement system and is intended for readers seeking a general grasp of the system and published estimates.

Chapters 3 and 4 discuss elements of the system in more detail, explaining how the various estimates are derived and elaborating on their interpretation. Chapter 4 explains the methodological changes in moving from the previous (2008-09) series of estimates to the 2013-14 series.

This annex is the latest in a series of papers providing information and updates on the Commission's assistance estimates and methodologies. Other relevant annexes, published since 2000, are listed in table 1.1.

Table 1.1 **Previous methodological annexes to *Trade & Assistance Review***

| *Date* | *Title* | *Details* |
|---|---|---|
| December 2000 | Allocating Budgetary Assistance by 27 ANZSIC-based Industry Groupings | Methodological Annex: Trade & Assistance Review 1999-2000 |
| December 2002 | The Commission's Assistance Measurement System | Methodological Annex A: Trade & Assistance Review 2001-02 |
| December 2002 | Allocating Budgetary Assistance to Primary Production by 10 ANZSIC-based Industry Groupings | Methodological Annex B: Trade & Assistance Review 2001-02 |
| June 2006 | Allocating Budgetary Assistance by Industry Groupings: Recent Revisions | Methodological Annex: Trade & Assistance Review 2004-05 |
| December 2008 | The '2001-02' series of assistance estimates | Methodological Annex: Trade & Assistance Review 2005-06 and 2006-07 |
| December 2011 | Methodological Annex: for Reviews Commencing 2008-09 | Methodological Annex: Trade & Assistance Review 2008-09 |
| June 2012 | Changes to the Commission's Assistance Estimates | Methodological Annex: Trade & Assistance Review 2010-11 |
| February 2014 | Estimation Framework, Coverage and Re-benchmarking of Estimates | Methodological Annex: Trade & Assistance Review 2011-12 |
| October 2014 | Changes to the Commission's Assistance Estimates | Methodological Annex: Trade & Assistance Review 2012-13 |
| November 2015 | Changes to the Commission's Assistance Estimates | Methodological Annex: Trade & Assistance Review 2013-14 |

*Source*: www.pc.gov.au/research/ongoing/trade-assistance.

A full list of the Commission's Trade & Assistance Reviews can be found at http://www.pc.gov.au/research/ongoing/trade-assistance.

# 2 Overview of the Commission's assistance measurement system

## 2.1 Coverage of assistance instruments

Section 10(6) of the *Productivity Commission Act 1998* defines assistance to industry as:

> … any act that, directly or indirectly: (a) assists a person to carry on a business or activity; or (b) confers a pecuniary benefit on, or results in a pecuniary benefit accruing to, a person in respect of carrying on a business or activity.

Reflecting this broad definition, an array of different instruments can provide assistance to industry. These include:

- tariffs, quotas, anti-dumping duties and regulatory restrictions on imported goods and services, such as local design rules and quarantine laws
- grants and subsidies for domestic producers
- tax expenditures and offsets for domestic producers
- 'in-kind' assistance provided by publicly-funded intermediaries, such as certain research undertaken by CSIRO
- regulatory restrictions on domestic competition, such as those provided by some statutory marketing arrangements and legislation that reserve markets for particular groups (for example, pharmacy service provision)
- the provision of services by government agencies at concessional prices
- government procurement policies.

For its annual estimates of industry assistance published in the *Trade & Assistance Review*, it is not practicable to cover all forms of government support to industry. Rather, the Commission's estimates focus on the main forms of support that selectively assist firms, activities or industries and that can be quantified on an annual basis given practical constraints in measurement and data availability.

The key assistance measures covered in the annual estimates are tariff assistance (including tariff concessions) and Australian Government budgetary assistance (including grants, subsidies and tax expenditures).[1] The coverage of assistance under each of these categories,

[1] Past estimates also included some agricultural pricing and marketing assistance, although these individual assistance instruments ended in 2008-09.

including changes made for the 2013-14 series, is described in detail in chapters 3 and 4 of this annex.

Some measures affording assistance that are not covered in the annual estimates include:

- Restrictions on trade in services — the nature of these restrictions and the difficulties in establishing a 'benchmark price' for services means it is difficult to determine the level of assistance associated with these restrictions. However, the Commission has separately published specific studies of barriers to services trade, and their price impacts.
- Anti-dumping and countervailing measures — the Commission does not include the assistance effect of these duties in its annual estimates, but reports year-to-year usage.
- State government measures — apart from nationally-significant agricultural pricing and marketing assistance provided by State arrangements, the Commission does not include State government assistance as part of its annual estimates. However, from time-to-time, the Commission has published broad estimates of the level of State government budgetary assistance to industry.[2]
- Various other assistance instruments, including government purchasing preferences, the under-pricing of infrastructure, the impact of tariffs on the cost of physical capital used in production, assistance effects that may be associated with quarantine restrictions, and government programs affecting a range of service industries, including the provision of health and welfare, where funding predominantly benefits consumers and individual citizens.

## 2.2 Classification of assistance

The Commission classifies its assistance estimates — comprising tariffs, budgetary outlays and tax expenditures — into a number of different groupings (figure 2.1).

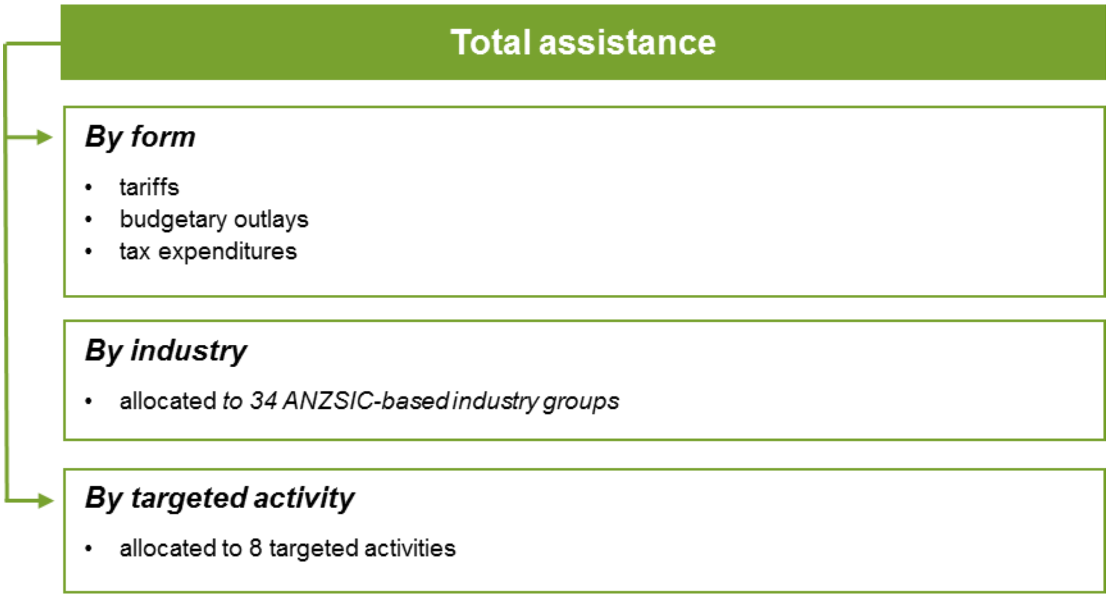
### Industry groupings

The level of industry detail at which the Commission reports on assistance, and the focus of its estimates, have changed over time. The initial focus was on assistance within the traded-goods sectors — particularly manufacturing and agriculture — where levels of assistance were found to be high. Over time, assistance targeted to these sectors has been reduced, while the incidence of budgetary assistance to both goods producing and services sectors has increased. Services activities have increased in relative economic importance and now account for around 90 per cent of value added in Australia.

---

2 The Industry Commission published such estimates for the years 1994-95, 1995-96 and 1996-97 as part of its 1996 public inquiry into *State, Territory and Local Government Assistance to Industry* (IC 1996). The Productivity Commission also published similar estimates for the years 2000-01 and 2001-02 (in *Trade & Assistance Review 2001-02*) and 2008-09 (in *Trade & Assistance Review 2009-10*).

## Figure 2.1 Classification of assistance




Reflecting these developments, from the 2001-02 *Review* (PC 2002b, 2002c), the Commission has included estimates of assistance to the services sector, and has integrated these, as far as practicable, with estimates in relation to manufacturing and agriculture.

In *Trade & Assistance Review 2015-16*, estimates of combined assistance are presented for 38 'industry groupings', 9 in the primary production sector, 12 in the manufacturing sector, 15 in the services sector, a mining group, and an unallocated other group(there are also 'unallocated' groupings within each sector other than mining) (table 2.1). The industry groupings are based on the classification of industries in the 2006 edition of the Australia and New Zealand Standard Industrial Classification (ANZSIC) (ABS 2013). The 38 published industry groupings comprise. To facilitate comparability of industry estimates overtime, as far as practical, the current 34 ANZSIC 2006–based industries, used to present the Commission's assistance estimates, reflect ABS industry classifications used in previous *Reviews*.

Under ANZSIC, there are no separate categories for functional groupings such as tourism. Rather, such activities span parts of several ANZSIC industry categories. While the Commission does not report assistance to functional groupings such as tourism in its annual estimates, from time to time it undertakes studies that cover assistance to such groupings.[3]

[3] The Commission published estimates of assistance to tourism, from Commonwealth and State Governments, for three years from 2000-01 to 2002-03, in its 2005 Research Paper *Assistance to Tourism: Exploratory Estimates* (PC 2005).

Table 2.1 **Industry groupings used for reporting assistance in Trade & Assistance Review 2015-16**

| *Industry grouping* | *ANZSIC 2006 codes* |
|---|---|
| **Primary production** | **A** |
| Horticulture and fruit growing | 011, 012, 013 |
| Sheep, beef cattle and grain farming | 014 |
| Other crop growing | 015 |
| Dairy cattle farming | 016 |
| Other livestock farming | 017, 018, 019 |
| Aquaculture and fishing | 02, 04 |
| Forestry and logging | 03 |
| Primary production support services | 05 |
| Unallocated primary production | – |
| **Mining** | **B** |
| **Manufacturing** | **C** |
| Food, beverages and tobacco | 11, 12 |
| Textile, leather, clothing and footwear | 13 |
| Wood and paper products | 14, 15 |
| Printing and recorded media | 16 |
| Petroleum, coal, chemical and rubber products | 17, 18, 19 |
| Non-metallic mineral products | 20 |
| Metal and fabricated metal products | 21, 22 |
| Motor vehicles and parts | 231 |
| Other transport equipment | 239 |
| Machinery and equipment manufacturing | 24 |
| Furniture and other manufacturing | 25 |
| Unallocated manufacturing | – |
| **Services** | **D-S** |
| Electricity, gas, water and waste services | D |
| Construction | E |
| Wholesale trade | F |
| Retail trade | G |
| Accommodation and food services | H |
| Transport, postal and warehousing | I |
| Information, media and telecommunications | J |
| Financial and insurance services | K |
| Property, professional and administration services | L, M, N |
| Public administration and safety | O |
| Education and training | P |
| Health care and social assistance | Q |
| Arts and recreation services | R |
| Other services | S |
| Unallocated services | – |
| **Unallocated other** | **–** |

*Source*: Commission estimates based on ABS (2013).

### Targeted activities

*Trade & Assistance Review* also categorises budgetary assistance by one of eight targeted activities:

- research and development
- exports
- investment
- industry-specific assistance
- sector-wide assistance
- small business
- regional/structural adjustment assistance
- a residual 'other' category.

These categorisations are explained further in chapter 3.

## 2.3 Estimation procedures

The approach adopted by the Commission to estimating the value of assistance varies depending upon the instruments used to provide the support.

- Where governments impose tariffs on imports, the assistance to competing Australian producers is determined as the subsidy equivalent inferred from the price increase allowed (in principle) by the tariff on Australian producers' domestic sales; not by the dollar amount of tariff revenue collected on imports.
- Where the protected goods are used by other industries as inputs, the negative assistance caused by tariffs on inputs is assessed as the tax equivalent imposed by tariffs on inputs (whether locally produced or imported) used in production.
- Where governments provide grants and subsidies directly to firms, the government expenditure on the subsidy is recorded as assistance. The annual estimates generally exclude the policy advice and general administration costs of government agencies that administer grants and other assistance programs.
- Where governments fund services that indirectly assist an industry, such as funding of CSIRO to conduct research activities, the full funding (excluding any industry contributions) is deemed to be assistance.
- Where governments provide tax concessions — exemptions, deductions, offsets, rebates, lower tax rates or tax liability deferrals — on a selective basis, the value of the assistance provided is estimated as the amount of tax revenue forgone by the government.

In quantifying the assistance provided each year by various measures, the Commission draws on a range of data sources, including:

- the Australian Customs tariff schedule
- ABS data on foreign trade flows, the Australian national accounts and input-output ratios
- Australian Government budget papers
- annual reports of government departments and agencies
- the Australian Government Tax Expenditure Statement
- Australian Taxation Office taxation statistics
- other government department and agency publications and communications.

The estimation procedures, and associated qualifications, are explained in more detail in chapters 3 and 4 of this paper.

## 2.4 Types of assistance measures

In reporting on assistance, the Commission uses several measures that highlight different aspects of assistance and its effects on the economy and that facilitate comparisons of the effects of the diverse assistance arrangements affecting businesses across the economy.

The basic concepts underpinning assistance measurement evaluation are:

- the *gross subsidy equivalent* (GSE), which is the dollar value of assistance to an industry's or activity's outputs through tariffs or budgetary outlays
- the *tax equivalent on materials* (TEM), which is the dollar value of the penalty on an industry's or activity's inputs due to the price-raising effects of tariff assistance on those inputs
- the *assistance to value adding factors* (AVAF), which is the dollar value of budgetary assistance that accrues to land, labour or capital returns of an industry or activity, and is not linked directly to the unit returns of outputs or the cost of inputs
- the *net subsidy equivalent* (NSE), which is a measure of the dollar value of net assistance to an industry's or activity's value added (and is equal to the GSE plus AVAF, less the TEM).

These concepts are used to define the *Trade & Assistance Review* publication categories:

- *gross combined assistance* which is equal to the dollar value of assistance to outputs (the GSE) plus assistance to value adding factors (AVAF); and
- *net combined assistance* (also referred to as the NSE) which, applying the above basic concept, equals the gross combined assistance less the dollar value of the penalty on inputs (the TEM).

The dollar value of net combined assistance is accompanied by a 'rate of assistance' measure, namely the *effective rate of assistance* (ERA) which is defined as the net combined assistance to industry (that is, the NSE) divided by the industry's net output (measured in unassisted prices) or, more formally, its 'unassisted value added'.[4]

These estimates of assistance are based on a 'static' model and focus on the value of assistance accruing to different activities. Implementation of the assistance estimation model is supported by a number of simplifying assumptions (box 2.1).

Box 2.1 **Assistance framework: key simplifying assumptions**

The analytical framework used for the Commission's assistance measures is static and partial equilibrium in nature. The main simplifying assumptions underlying the application of the framework are:

- perfect substitution between domestic and foreign goods of the same description
- the 'small country' assumption, whereby Australia does not influence the world price of its imports or exports (that is, the terms of trade are assumed to be exogenous)
- no substitution between nominally different goods
- infinite elasticities of export demand and import supply
- the prices of goods, services, and resources in the absence of assistance represent their opportunity cost to the community
- the direction of trade in the absence of assistance can be assessed, with import parity prices forming the benchmark for goods assessed to be import-competing and export-parity prices for export goods
- production relationships between inputs are unaltered by the assistance structure
- constant returns to scale

A detailed discussion of the framework is provided in the Commission's 1995 paper: *Assistance to agricultural and manufacturing industries* (IC 1995).

The measurement of the assistance concepts for the *Trade & Assistance Review* is described in chapters 3 and 4.

## 2.5 Interpretation

Estimates of industry assistance are intended to aid transparency and facilitate analysis of public policies. Such estimates can help to reveal which activities benefit and which are penalised in the first instance from particular government policies. Assistance estimates can also provide an indication of the resource allocation effects of the assistance structure. By highlighting which policies afford the greatest assistance or which industries receive the most support from assistance, they can aid in the prioritisation of policy reviews. Assistance estimates can also be of use as an input into broader evaluations of the merits of particular

4 Other assistance concepts that can be calculated include: the nominal rate of assistance on outputs which is the GSE divided by the industry's value of production (measured in unassisted prices); and the nominal rate of assistance on inputs which is the TEM divided by the industry's value of materials (measured in unassisted prices).

policies. However, the estimates themselves only provide a partial guide to these matters and must be interpreted carefully. Guidance on the interpretation of the estimates, including the key qualifications, is set out in box 2.2.

### Box 2.2 **Interpreting the estimates**

The Commission's estimates of government assistance to industry are intended to aid transparency and facilitate analysis of various matters related to the assistance structure. The estimates themselves, although important, provide only a partial guide to these matters and must be interpreted carefully.

#### Transfers

The assistance estimates help to reveal who gains and who loses from industry assistance, and the extent of those gains and losses. The NSE is a dollar estimate of the net effects of assistance measures and is used to provide an indication of the transfers of income to producers from consumers, taxpayers and intermediate suppliers resulting from the assistance structure.

The estimated transfers of income, however, being based on a 'static' model do not explicitly take account of:

- changes in production and consumption in response to changes in assistance;
- flow-on effects to broader economic variables, such as exchange rates and general price levels; and
- the overall 'welfare' costs, or 'deadweight' losses, from assistance.

#### Resource allocation

The estimates also provide a broad indication of the resource allocation effects of the assistance measures covered. The ERA is used as an indicator of the net incentive effect of the many different forms of assistance.

Care is required, however, in drawing inferences about the flow-on resource allocation effects given the 'static' nature of the underlying model, incomplete coverage of government interventions and general aggregation of the estimates.

#### Policy evaluation

Industry assistance has a range of benefits and costs, and whether the benefits exceed the costs may to some extent, depend on whether the measure in question addresses a 'market failure', or other distortion, and is efficient in doing so.

Traditionally, industry assistance captured by the Commission was derived mainly from tariffs and restrictive agricultural marketing arrangements. These instruments were difficult to justify on economic efficiency grounds and there was potential to improve overall economic efficiency and welfare through reducing this assistance.

Over time, however, measured assistance to manufacturing and agriculture from tariffs and restrictive marketing arrangements has declined significantly, while other forms of assistance have increased. Some of this assistance, such as for R&D, is directed towards activities where there is some evidence of market failure. This suggests that some forms of assistance may be justified on economic efficiency and welfare grounds.

# 3 Coverage of assistance estimates, classification and quantification

The key forms of assistance currently covered in the Commission's annual estimates are:

- tariff assistance
- budgetary assistance provided by the Australian Government in the form of budgetary outlays (grants and subsidies) and tax expenditures.

## 3.1 Tariff assistance

Australia's tariffs on imported goods are set by the Australian Government and a record of individual tariff levels is maintained in the Australia Customs Tariff Schedule. Australian tariffs are levied on the value of imports in the foreign port (that is, the 'free-on-board' (fob) value), as opposed to the landed value of imports (that is, the 'cost, insurance and freight' (cif) value).

Tariffs (and import quotas) on imports have been reduced significantly since the early 1970s. As a result, with the exception of some cheeses,[5] and second hand motor vehicles (and luxury car taxes),[6] all general tariffs applied to imports are now 5 per cent or less.

Trends in the value of imports by tariff rate grouping, since the mid-1990s, are shown in table 3.1. As an example, the proportion of imports with zero tariff rates has increased from 36.4 per cent of import values in 1996-97 to over 50 per cent in 2011-12, then declining to 43.5 per cent in 2015-16.[7]

---

5 The importation of cheese and curd into Australia is subject to a tariff-quota arrangement. The quota allows for the importation of 11 500 tonnes of cheese per annum at a 'specific' tariff rate of $0.096 per kilogram. If the quota is exceeded (in a financial year), imports are subject to a much higher 'out-of-quota' tariff rate of $1.220 per kilogram. For the Commission's assistance estimates, it is assumed that the full effects of the out-of-quota tariff are passed onto domestic consumers in the form of higher prices.

6 Like new passenger motor vehicles, tariffs applying to used or second-hand (passenger motor) vehicles were also reduced from 10 per cent to 5 per cent on 1 January 2010. 'High-volume' imports of second-hand motor vehicles, however, attract an additional import duty of $12 000 per vehicle. This duty does not apply to vehicles that are at least 30 years old or to individuals importing a single vehicle.

7 The declining trend to 2015-16 may reflect a shift in the import mix toward products that have a non-zero tariff (such as motor vehicles). The estimates may also understate the share of zero tariff imports as zero tariffs applied under Australia's preferential trading agreements are not reflected in the Commission's TIDES model (see box 3.1).

Table 3.1 **Distribution of the value of imports by tariff rate grouping, selected years**

per cent

| | *1996-97* | *2001-02* | *2004-05* | *2008-09* | *2011-12* | *2015-16* |
|---|---|---|---|---|---|---|
| Zero rates | 36.4 | 48.1 | 46.1 | 51.0 | 50.7 | 43.5 |
| > 0 to < 10 per cent | 32.3 | 37.8 | 41.7 | 38.4 | 46.8 | 56.3 |
| 10 to < 20 per cent | 21.7 | 11.4 | 9.7 | 10.4 | 2.5 | 0.1 |
| > 20 per cent | 9.5 | 2.7 | 2.5 | 0.2 | <0.1 | 0.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

*Source*: Commission estimates based on Australian Customs tariff schedules and ABS trade data.

For some tariff items and some categories of trade, concessional entry or duty exemptions are afforded to imports.

- *Duty exemptions or preferences for selected countries*. Imports from certain sources, such as qualifying goods from Papua New Guinea, the Forum Islands and some other developing countries, are given duty free status. Australia is also a party to a number of bilateral and regional preferential trade agreements, including with New Zealand, Canada, Singapore, Thailand, the United States, Chile, Malaysia and ASEAN countries, under which qualifying imports enter at preferential rates (generally as a zero tariff).
- *Tariff concessional arrangements*. Imports entering under the Tariff Concession System (TCS), Project and other policy by-laws, the Duty Drawback Scheme and TRADEX typically enter at a zero or concessional rate.
- *Duty exemptions for government imports*. Certain government imports enter duty free. Such imports are for defence purposes and general government use.

## Quantification of tariff assistance

Estimates of tariff assistance for outputs and the tariff cost penalty for inputs are derived in two stages. These involve:

- using the Commission's Tariff and Import Database and Estimating System (TIDES) model to provide estimates of the 'price impacts' of tariffs for both output and input goods
- combining these results with ABS input-output data to derive estimates of the gross and net subsidy equivalents.

## Stage 1: Calculating price impacts using TIDES

Information from the Australian Customs tariff schedules and ABS merchandise trade imports is used in TIDES to estimate the price impacts of tariffs and quotas for both domestic and imported goods.

### *Step 1: Imputed duty*

As a first step, TIDES derives an estimate of 'imputed duty' for each import item — that is, the notional duty payable for each tariff item, given its value of imports and operative tariff rate. The calculations are made at the 8-digit tariff line item level, the classification level at which tariffs are imposed.

To take into account the effects of relevant tariff concessions and duty exemptions on imported goods, TIDES separates the import data into three groups and then estimates imputed duty separately for each group.

- *General entry items*. General entry items comprise imported goods that are subject to the general most favoured nation (MFN) tariff rate and do not receive any form of tariff concession or duty exemption. For this group, imputed duty is calculated as the 'free-on-board' (fob) value of imports for duty multiplied by the annualised actual tariff rate for each tariff item.[8]
- *Government entry items*. Government entry items comprise goods imported by the government such as defence goods and goods for general government use. Goods subject to government entry enter duty free. Imputed duty for this group is set at zero.
- *Concessional entry items*. Concessional entry items comprise imported goods for which the general tariff rate is amended to reflect concessional entry (for example, commercial tariff concessions). For this group, the calculation of imputed duty is similar to that for general entry items except that the tariff rate is adjusted to reflect the tariff concession.

The assistance effects of the preferential tariff rates in trade agreements depend on various matters, including the extent to which producers in partner countries undercut the price of rival imports into Australia, rather than simply 'pocketing' the concession provided (see box 3.1). In the Commission's estimates of tariff assistance, the 'most favoured nation' (MFN) tariff rate is applied to merchandise imported under preferential trading arrangements.

[8] Where a tariff rate changes during the year, a simple average of the old and new tariff rates is derived for that year. For example, when PMV tariff rates declined from 10 per cent to 5 per cent on 1 January 2010, an average tariff rate of 7.5 per cent was used to represent PMV tariffs during the 2009-10 financial year.

*Step 2: Map the imputed duty from import item to input-output product classification*

The second step is to recode the imputed duty estimates at the 8-digit tariff schedule level (around 5650 items in 2013-14) to the 2013-14 Input-Output Product Classification (IOPC) level (1267 items). TIDES does this using concordances provided by the ABS. (The same procedure is used to recode the landed value of imports, which is also necessary for determining price impacts (see below) at the IOPC level.)

### Box 3.1 **Assistance effects of Preferential Trade Agreements**

**Domestic market effects**

The tariff preferences provided under PTAs need not result in any significant impact on prices in the domestic market and, thus, on assistance to Australian industry provided by the general (MFN) tariff regime. This would be the case if producers in the partner country effectively 'pocketed' the tariff concessions, rather than reduced their prices below the prevailing (tariff-inflated) price of rival imports.

To the extent that tariff concessions provided by PTAs result in a reduction in the prices of imported products in the Australian market, assistance to the relevant industry's outputs will be lower than that implied by the MFN rate. Equally though, to the extent that the price of imported inputs falls as a result of PTA preferences, the penalties (or negative assistance) on the industry's inputs will also be lower than implied by the MFN rate. Whether this leads to a net overstatement or understatement of assistance to the Australian industry in question would depend on trade patterns with the PTA partner countries, which products are subject to price reductions, and their relative magnitudes.

**Partner market effects**

To the extent that PTAs afford Australian producers preferential market access in partner countries, assistance to those producers could be increased. In effect, Australian producers would obtain the benefit of assistance provided by a partner country's general tariff regime for their exports to that market. The actual assistance effects would depend on the extent of trade between partner countries and the margin of preference afforded by the PTA.

The Commission published, as a supplement to its Research Report on the Australia-New Zealand Closer Economic Relations Trade Agreement (CER), estimates of assistance provided by CER tariff preferences (PC 2004). A further discussion of domestic and partner market effects is provided in that document.

*Step 3: Calculate tariff price effects for both outputs and inputs*

In the third step, TIDES derives estimates at the IOPC classification level of the price impacts of tariffs and quotas on domestic producer prices for both output and input goods. The price impacts of tariffs are defined as the imputed duty divided by the landed value of imports (that is, the cost, insurance and freight (cif) value for each category of good).

- For *output goods* — only data from the general entry group is used to estimate the domestic price impacts of tariffs and quotas for each item of trade. Government and concessional entry items are excluded, as they are assumed not to be competing with domestically supplied items.

- For *input goods* — data from the general and concessional entry groups are used to calculate the domestic price impacts of tariffs and quotas. The trade data does not identify the mix of general and concessional entry items by each industry; only the overall split for total imports of the item. Thus, it is necessary to assume that every industry uses the same aggregate mix. Goods subject to government entry are excluded as they are assumed to be directed to final use (consumption or investment by government).

### Stage 2: Estimating subsidy and tax equivalents using ABS input-output data

The price impacts of tariffs (and quotas) are then combined with ABS input-output data to derive estimates of border assistance for both output and input goods.

For *output goods*, the price impacts of tariffs (and quotas) are combined with ABS input-output domestic production data to estimate the dollar value of output tariff assistance — the Gross Subsidy Equivalent (GSE).

For *input goods*, the price impacts of tariffs (and quotas) (that is, the nominal rate of assistance on inputs) are combined with ABS input-output intermediate usage data to derive estimates of input tariff assistance — the Tax Equivalent on Materials (TEM). The TEM is negative assistance — the cost penalty on producers from using imported inputs, or their domestic equivalent, that are subject to the price raising effects of tariffs (and quotas).

The GSE and TEM estimates are initially derived by the ABS on request from the Commission using the TIDES price data. The estimates are derived by the ABS using confidential data at the IOPC (around 1267 items in 2013-14) level. These estimates are then aggregated to the 114 industry ABS 2013-14 Input-Output Industry Group (IOIG) classification, checked for confidentiality, and returned to the Commission.

The Commission then calculates, at the 114 industry level, net tariff assistance, the Net Subsidy Equivalent (NSE) of tariffs, as the GSE less the TEM.

For publication in *Trade & Assistance Review*, the Commission aggregates the 114 industry results to the ANZSIC-based 38 industry level and combines these estimates with estimates of budgetary assistance at that level.

## 3.2 Budgetary assistance

### Coverage

The annual estimates cover a wide range of budgetary measures.

The specific measures included in the *Trade & Assistance Review 2015-16* (and with funding in the 2015-16 year), are listed in table 3.2 at the end of this chapter. The coverage of measures included in the budgetary estimates is revised each year to reflect the expiration of programs or the introduction of new programs.

While the estimates cover a wide range of Australian Government budgetary measures, they do not incorporate all budgetary measures that provide support for industry for a range of practical and conceptual reasons. Among the exclusions are:

- budgetary measures which are generally available to all firms – for example, reductions in company tax rates applying to all firms
- various outlays focused on public administration, defence, health, education, the environment and the labour market
- budgetary assistance provided by State, Territory and local governments
- spending on infrastructure, except where it clearly is intended to afford selective support to specific industries or activities.

## Classifications

To provide some indication of the nature of Australian Government budgetary assistance, the Commission classifies budgetary assistance according to:

- the form of budgetary assistance
- the activity it predominantly assists
- the sector and industry grouping to which it applies.

### Forms of budgetary assistance

Budgetary measures are categorised as either *budgetary outlays* or *tax expenditures* (or '*concessions*'),[9] which are further distinguished by the type of benefits provided (figure 3.1).

In relation to budgetary outlays, a distinction is made between:

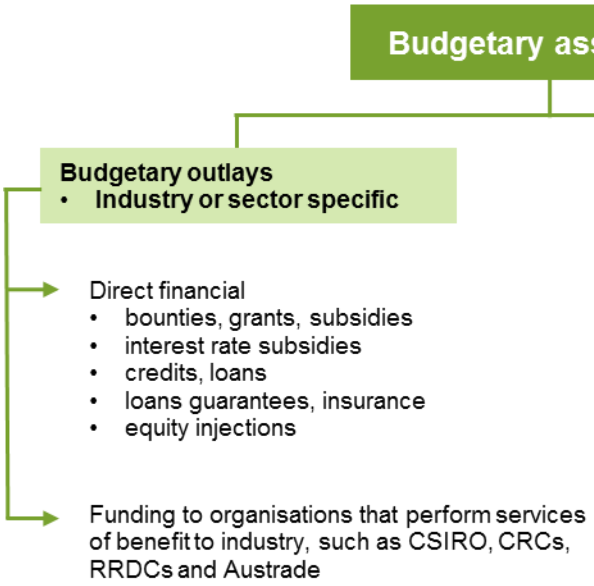
- *Direct financial assistance* (DFA) — such as bounties, grants and subsidies, interest rate subsidies, loans, credits and guarantees, and government equity participation.
- *Funding of intermediaries* (FI) *that perform activities of benefit to industry* — such as funding of CSIRO and CRC research programs, Austrade's International Business Services and Tourism Australia. In contrast to DFA, the provision of services through the funding of intermediaries (FI) raises producers' returns indirectly (for example,

9 Some industry assistance is in the form of a 'tax expense' (such as the Film Industry Offsets and R&D Tax Offsets). These are 'delivered' by the Australian Tax Office as part of tax assessments of eligible businesses. Tax expenses are included in the Commission's tax 'concession' category.

where research improves crop yields or manufacturing processes, or, as in the case of tourism assistance, through the provision of generic marketing).

Tax expenditures provide financial benefits to industry in the form of tax exemptions, deductions, rebates, preferential tax rates and tax deferrals. Tax deductions, such as the R&D tax concession, allow certain expenditures to be eligible for deductions which normally would not be allowed in the tax system. Preferential tax rates involve the application of a lower tax rate for particular industries. The deferral of tax over a number of years provides pecuniary benefits to recipient firms.

Figure 3.1 **Forms of budgetary assistance**




## Activities assisted

Budgetary assistance is often designed to encourage particular activities or to support particular firms, industries or sectors. To provide an indication of the distribution of assistance among activities, the Commission classifies its estimates of Australian Government budgetary assistance into one of eight categories:

- *R&D* measures — schemes which support business research, such as R&D taxation concessions and funding of rural R&D corporations, CSIRO and Cooperative Research Centres
- *Export* measures — such as the Export Market Development Grants scheme, import duty drawback, TRADEX and Austrade
- *Investment* measures — schemes which encourage certain types of investment, such as the development allowance and several former investment attraction packages

- *Industry–specific* measures — schemes which are designed to encourage production in particular industries, such as the Automotive Transformation Scheme, the Clothing and Household Textile Building Innovative Capability Program, Film Industry Offsets Scheme and the Offshore Banking Unit Taxation Concession
- *Sector–wide* measures — programs that are specific to a particular sector and designed to facilitate adjustment or provide income support, such as drought relief assistance and the tax concessions under the Farm Management Deposits Scheme, in the case of the primary sector
- *Small business* programs — measures that specifically restrict eligibility to 'small' businesses (variously defined across programs) such as the small business capital gains tax concessions, the Small Business Simplified depreciation rules scheme and concessional company taxation for small business
- *Regional* assistance programs — measures intended to promote regional industry such as the Tasmanian Freight Equalisation Scheme, Tasmanian Jobs and Growth Package and various structural adjustment programs with a regional focus
- *Other* measures — schemes that do not fall within any of the above categories such as the Textiles, Leather, Clothing and Footwear Corporate Wear Program, the Pooled Development Funds initiative, and the Enterprise Connect Innovation Centres Initiative.

Some caution is required in interpreting estimates by activity because some programs could 'fit' into more than one category; for instance, rural R&D could be R&D or sector specific (rural). The Commission has allocated each program's total funding to one category only.

## Sectoral and industry assistance

As well as classifying budgetary assistance by form and activity, the Commission also estimates the incidence of budgetary assistance by industry based on the concept of 'initial benefiting industry' (IBI) (box 3.2).

Prior to 1999, the incidence of budgetary assistance was reported using a four-sector classification of the economy. Over time, the Commission has disaggregated the agriculture, manufacturing and services categories and now reports assistance at 34 defined industry groupings, plus 4 unallocated groupings (table 2.1).[10]

[10] In 2000, the industry classification was broadened to include 27 industry groupings. Under this system, primary production and mining remained as single categories, while manufacturing and services were subdivided into 11 and 14 industry groupings, respectively. This disaggregation was first completed for the *Trade & Assistance Review 1999-2000* and a detailed description of the methodology used was included in a *Methodological Annex* (PC 2000). For *Trade & Assistance Review 2001-02*, the Commission expanded its industry classification to include 10 new primary production groupings. The new allocation provided significantly more detail than the previous classification. The methodology used to disaggregate the estimates for primary production was included in *Methodological Annex B* of the 2001-02 *Review* (PC 2002c).

In allocating assistance to industry groupings, each program is examined individually. Programs that assist only a single industry, such as the Clothing and Household Textile Building Innovative Capability Program or the Grape and Wine R&D Corporation, are allocated directly to that industry (*Textile, leather, clothing and footwear* and *Horticulture and fruit growing*, respectively).

### Box 3.2 **The 'initial benefiting industry' allocation method**

Under the 'initial benefiting industry' (IBI) concept for estimating the incidence of assistance, assistance is allocated to the industry hosting the firm that initially benefits from a program or measure. Where a number of firms, in different industries, initially benefit from a particular program or measure, the Commission seeks to apportion the assistance between those industries.

Thus, where a firm receives a direct payment or claims a tax concession, the assistance is recorded against the ANZSIC industry grouping that the firm's principal activities belong to.

In cases where assistance is delivered via an intermediate organisation, such as Austrade export promotion services or CSIRO research, the initial benefiting industry is taken to be that in which the firms that utilise the services operate. For example, wheat research by CSIRO would be allocated as assistance to the wheat growing industry (part of the Sheep, beef cattle and grain farming ANZSIC industry grouping).

Similarly, a small business program that uses consultants to provide business planning or IT advice to farmers would be classified as initially benefiting the agricultural industries, not the business services or IT industry (that the consultant is part of).

The Commission includes in its assistance some programs where the initial recipients are consumers (rather than firms or intermediary bodies). In such cases, the assistance is classified to the industry providing the good or service to the consumer. For example, in the case of assistance paid to convert cars to LPG, assistance is deemed to accrue to the industry providing the conversion service.

Similarly, where assistance is provided to an intermediary service, such as transport or financial services, and that assistance lowers the cost of a good or service to a user, the initial benefiting industry is deemed to be that of the user, rather than the intermediary.

Where the Commission cannot identify the initial beneficiary of a program, the assistance is recorded as 'unallocated'. That is, it is included in the aggregate estimates, but not in the industry totals.

The IBI approach does not attempt to identify all of the ultimate beneficiaries of assistance that arise through flow-on effects. For example, budgetary assistance to the Australian film industry is allocated to the ANZSIC industry category of Arts and recreational services. However, the benefits of this assistance could extend beyond this particular industry, say to Construction services in the case where film production requires these services as inputs. Further, an increase in demand for construction services may increase demand in the Wood and paper products industry, and so on.

Many programs assist multiple industries — for example, income tax averaging provisions. A variety of sources are used in determining to what extent each industry is likely to benefit from these programs.

- Where the Commission can obtain sufficiently detailed data for a program, it uses this information to distribute the program's funding among the initial benefiting industries. For example, it obtains ANZSIC claims data for the Export Market Development Grants scheme which is sufficiently detailed to determine the initial benefiting industries for the program.
- For programs that provide grants and where the Commission has details on the individual grants, it uses this information to assign each grant to a particular industry. For example, the (former) Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education published details of grant recipients for many of its administered programs. These details have been used to determine the initial benefiting industry for the program.
- Where data indicating which industries initially benefit from a particular program are not available, the assistance given under that program has been recorded as 'unallocated'. There are four 'unallocated' categories: one each for primary production, manufacturing and the services sectors (used when the initial benefitting sector can be identified but not the initial benefitting industry or industries within it), and an 'unallocated other' category for assistance that cannot be assigned to particular sectors based on available information.[11] 'Unallocated' funding forms part of the Commission's aggregate estimates of assistance.

The IBI approach does not attempt to identify all of the ultimate beneficiaries of assistance, through flow-on effects. Particular care is therefore required in drawing inferences about the resource allocation effects given the 'static' nature of the underlying model. This aspect of the model, and the IBI approach, means that only the initial effects of assistance are captured, while the responses of producers and consumers to the incentives created by the provision of assistance are not (box 3.3).

## Quantification

In quantifying the assistance provided each year by various budgetary measures, the Commission draws on the following sources:

- Australian Government budget papers
- annual reports of government departments and agencies
- the Australian Government Tax Expenditure Statement (TES)
- Australian Taxation Office taxation statistics
- other government department and agency publications and communications.

[11] For *Trade & Assistance Review 2015-16*, 'unallocated other' accounted for 13 per cent of total assistance, while the sectoral unallocated categories accounted for a further 8 per cent.

## Box 3.3 Initial and flow-on effects of assistance: an illustration of oranges and grapes

To understand how budgetary assistance classified to one industry — the IBI — can directly and indirectly affect other activities, consider a simplified situation in which some farmers grow grapes and some grow oranges. Returns in these two industries are about the same, say around a 10 per cent return on investment, and all grapes and oranges grown in this economy are consumed in it too, with no imports or exports.

If a subsidy is provided to producers of oranges (that subsidy being classified to the IBI oranges) returns on investment could increase, say to 20 per cent, with orange farmers receiving the full value of this windfall gain upon the introduction of the subsidy.

Over time, however, some grape farmers are likely to switch to growing oranges (and existing orange farmers, or other investors, may bring more land into production). This will cause the supply of oranges to increase and, to clear their stock, producers will need to cut the price. As prices fall, consumers will buy more oranges, but returns to the orange industry will decline as the unit value of the subsidy is bid away.

Meanwhile, in the grape industry, supply falls putting upward pressure on prices. As prices rise, consumers buy fewer grapes, but the returns to grape growing increase.

As long as the subsidised returns to orange production exceed the returns to grape growing, farmers have a continuing incentive to switch from grapes into oranges. This will continue until (the risk adjusted) returns in both industries align.

However, to finance the subsidy for orange producers, the government needs to raise extra revenue (through higher taxes or higher charges for services it provides), cut spending, or incur a higher budget deficit or lower surplus. Say it raised more revenue through a tax on fuel. This would increase orange and grape growers' fuel bills and further reduce, although only slightly, the returns in those industries. It would also reduce returns in other industries which rely on fuel to produce their output, particularly energy-intensive industries. Householders would also have to pay slightly higher fuel bills, leaving slightly less to spend on other goods and services.

With other industries facing slightly higher fuel bills and slightly lower demand for their products, some 'borderline' businesses in these industries may need to close or reduce their production (unless they are able to make offsetting gains in productivity).

Overall, the effect of providing assistance in this illustration is to increase orange production, mainly at the expense of a fall in grape production, and for production in other industries to fall slightly (without productivity improvements). Consumers eat more fruit (but a different mix thereof) and consume less of other products.

While in practice the world is more complex than this simplified illustration, it nevertheless provides an indication of the nature of some of the effects that can flow from the provision of assistance to industry.

Classification of assistance by IBI provides an indication of the point in a production and distribution chain where a government intervention initially bites.

For programs that are funded jointly by industry and governments (such as rural R&D corporations), the estimates incorporate only the government contribution to programs' funds. To simplify measurement, industries are generally assumed to benefit from assistance in the year that the outlay or transaction is reported in the budget papers, TES or other source documents.

Different levels of confidence are attached to the estimates of different forms of budgetary assistance.

- High confidence attaches to estimates of financial assistance provided directly to firms (DFA), which are reported in budget papers and other audited government documents.
- While there is equally high confidence in estimates of the size of outlays provided to intermediary institutions (FI), there is some uncertainty about the extent to which such assistance ultimately benefits the industry that is the target of the assistance. In counting the full outlay as assistance to the initial benefitting industry, it is assumed that the funded body operates efficiently and/or that the industry obtains flow-on benefits from the services equal to their cost of provision. To the extent that this is not the case, the estimates will either overstate or understate assistance to recipient industries.
- Estimates of assistance from tax expenditure estimates (TE) are subject to more uncertainty than estimates of budget outlays, reflecting methodological and data issues entailed in the modelling that underpins the estimates (see Australian Government 2017, p. 6).

## 3.3 Estimates of combined assistance

As well as publishing separate estimates of assistance from tariffs, budgetary outlays, tax expenditures and agricultural pricing and marketing measures, the Commission also calculates 'combined' estimates of these different categories. The 'combined' assistance is calculated both in values and as a percentage rate of assistance (the effective rate of assistance). The calculation of these estimates are based on a number of simplifying assumptions (see box 2.1 in chapter 2).

### Deriving the combined estimates of assistance

As noted in chapter 2, the dollar values of these forms of assistance, quantified by the Commission, are combined in two key summary measures:

- *gross combined assistance* which includes assistance to output and value adding factors afforded by tariff output assistance, budgetary outlays and tax expenditures
- *net combined assistance* which is equal to gross combined assistance less the cost impost to industry of tariff assistance on inputs.

These summary measures highlight the overall level of assistance, in dollar terms, available to industry.

### *Assistance to outputs, inputs and value adding factors*

In order to estimate 'combined' effective rates of assistance, the dollar value of assistance from tariffs, budgetary outlays and tax expenditures are first classified into one of three categories:

- output assistance
- input assistance
- assistance to value-adding factors.

Output and input (predominately negative) assistance is afforded mainly through customs tariffs and tariff concessions, although some budgetary measures such as production subsidies and export assistance are also classified as output or input assistance, as appropriate.

Assistance to value adding factors is afforded through budgetary outlays and tax expenditures. In 2015-16, around 90 per cent of budgetary assistance was classified as assistance to value adding factors.

The components of output assistance and input assistance are aggregated to provide dollar estimates of the combined 'gross subsidy equivalent' (GSE) and 'tax equivalent on materials' (TEM), respectively. The sum of the GSE and assistance to value adding factors less TEM is equal to the 'net subsidy equivalent' (NSE). Under the assumptions of the assistance framework, the summary measure *net combined assistance* represents the net subsidy equivalent of assistance.

As the budgetary assistance estimates are recorded in current year dollars while estimates of tariff assistance are based on ABS input-output data for 2008 09, the latter are revalued to current dollars using ABS data on Gross Value Added (GVA) at current prices. Although there are periodic revisions to ABS GVA data, such revisions typically do not affect year-to-year comparisons of the assistance estimates.

### *Nominal and effective rates of assistance*

The combined GSE, TEM and NSE estimates are used, together with ABS input-output data, to estimate nominal and effective rates of assistance for industry groups within the traded-goods sectors — agriculture, mining and manufacturing. Estimates of effective rates of assistance are not estimated for services activities for the *Trade & Assistance Review.*

The *nominal rate of assistance on outputs* (NRO) is calculated as output assistance, or the GSE, divided by the 'unassisted' value of output (UVO). The UVO is equal to the *'assisted'* *value of output* (AVO) less the GSE. Some forms of assistance (such as tariffs, import quotas and, in some years, domestic pricing arrangements) increase producers' returns by raising prices (called the price distortion), while other forms of assistance (such as production bounties) raise producers' returns without increasing prices paid by user industries. The nominal rate of assistance on outputs, therefore, measures the extent to which consumers pay higher prices and taxpayers pay subsidies and bounties in support of local output.

The *nominal rate of assistance on 'materials'* (NRM) is a measure of the extent to which prices paid for materials (intermediate inputs) used in the production process change due to government assistance. For example, tariffs on intermediate inputs penalise user industries by raising prices, while consumption subsidies benefit user industries by lowering prices. Unlike the nominal rate of assistance on outputs, the nominal rate on inputs excludes those forms of assistance (for example, production bounties) which benefit the production of intermediate inputs without affecting the prices paid by user industries. The NRM is defined as input assistance, or the TEM, divided by the *'unassisted' value of materials* (UVM) — which is derived in a similar manner to the UVO.

The *effective rate of assistance* (ERA) measures net assistance to an activity's value-adding activities, by taking into account not only output assistance and direct assistance to value-adding factors (including budgetary outlays and tax expenditures), but also the penalties (from tariffs on inputs) and benefits (from budgetary input subsidies) of government assistance on inputs. The ERA is calculated as the NSE divided by the *'unassisted' value added* (UVA), expressed as a percentage. The UVA is calculated as the UVO less the UVM.

### *Treatment of service inputs in calculating value added*

One issue that arises in calculating (unassisted) value added — the denominator in the effective rate of assistance calculations — is the treatment of 'service' inputs. Such service inputs fall outside the ambit of merchandise trade in foreign trade statistics and are deemed 'non-material' and not 'directly traded'.[12] There are two basic approaches to the treatment of service inputs in effective rate calculations.

- One approach — termed after its originator — is the 'Corden method'. This approach, adds the cost of service inputs (other than electricity, gas and water)[13] into the value added bases of the agricultural or manufacturing industry. The simplifying assumption is that service inputs (such as accounting) are primarily produced by value adding factors (accountants).

12 The term non-traded non-material (NTNM) inputs is the technical expression commonly used in methodology papers.

13 Electricity, gas and water are classified as 'traded' in merchandise trade statistics and therefore the Commission treats them as 'material' costs.

- The other approach — the 'Balassa method' — treats the service inputs as 'traded' inputs, under the assumption that they are supplied at constant costs as determined by traded-services prices. That is, the cost of service inputs is treated as a merchandise input (as with flour into bread making).

The difference between the approaches is that the Corden method calculates larger 'value added' for agriculture and manufacturing than would typically be reported in national accounts statistics. Consequently, the effective rate of assistance, for a given level of tariff and budgetary assistance, would be lower under the Corden method than the Balassa method.

Prior to 2001-02, the Commission's effective rate estimates for manufacturing used a modified–Corden method for calculating the value added base — it included, some but not all, service inputs. At the same time, the estimates for the agricultural sector used the Balassa method. A more detailed description of the treatment of service inputs in value added calculations is available in the Industry Commission's 1995 paper *Assistance to Agricultural and Manufacturing Industries*. Beginning with 2001-02 estimates (and since), the Commission has adopted the Corden method for all manufacturing and agricultural industries.

Table 3.1 **Australian Government budgetary assistance measures, 2015-16**[a]

| *Program* | *Category* | *Form*[b] |
|---|---|---|
| Asia Marketing Fund | Other measures | BO |
| Asialink Business | Other measures | BO |
| Asian Business Engagement Plan | Industry-specific measures | BO |
| Austrade | General export measures | BO |
| Australian Animal Health Laboratory | Industry-specific measures | BO |
| Australian Government Innovation and Investment Fund — Tasmania | Other measures | BO |
| Australian Renewable Energy Agency | General R&D measures | BO |
| Australian Tropical Medicine Commercialisation Grants | Industry-specific measures | BO |
| Automotive Diversification Programme | Industry-specific measures | BO |
| Automotive New Markets Initiative | Industry-specific measures | BO |
| Automotive Transformation Scheme | Industry-specific measures | BO |
| Bass Straight Passenger Vehicle Equalisation | Industry-specific measures | BO |
| Bindaree Beef assistance | Industry-specific measures | BO |
| Boosting Farm Profits Through Rural R&D — A Competitive Agricultural Sector | Rural R&D measures | BO |
| Brandy preferential excise rate | Industry-specific measures | TE |
| Capital expenditure deduction for mining, quarrying and petroleum operations | Sector-specific measures | TE |
| Carbon Capture and Storage Flagships Program | Industry-specific measures | BO |
| Carbon Farming Futures | Sector-specific measures | BO |
| Caring for our country — Landcare | Sector-specific measures | BO |
| Clean Technology Innovation Program | General R&D measures | BO |
| Clean Technology Investment — Food and Foundries Program | Industry-specific measures | BO |
| Clean Technology Investment — General Program | Sector-specific measures | BO |
| Clothing and Household Textile Building Innovative Capability Program | Industry-specific measures | BO |
| Commercialisation Australia | General R&D measures | BO |
| Community Broadcasting Program | Industry-specific measures | BO |
| Concessional rate of withholding tax | Other measures | TE |
| Concessional taxation for small business — Lower company tax rate | Other measures | TE |
| Cooperative Research Centres | General R&D measures | BO |
| Cotton Research and Development | Rural R&D measures | BO |
| CSIRO | General R&D measures | BO |
| Dairy Research and Development | Rural R&D measures | BO |
| Defence Materials Technology Centre | General R&D measures | BO |
| Drought Assistance Package — concessional loans | Sector-specific measures | BO |
| Duty Drawback | General export measures | TE |
| Egg Research and Development | Rural R&D measures | BO |
| Enterprise Connect Innovation Centres | Other measures | BO |
| Entrepreneurs' Infrastructure Programme — Accelerating Commercialisation | Other measures | BO |

(Continued next page)

Table 3.1 **(continued)**

| *Program* | *Category* | *Form*[b] |
|---|---|---|
| Entrepreneurs' Infrastructure Programme — Business Management Skills | Other measures | BO |
| Environmental Stewardship Program | Sector-specific measures | BO |
| Exemption of film tax offset payments | Industry-specific measures | TE |
| Export Market Development Grants Scheme | General export measures | BO |
| Farm Co-operatives and Collaboration Pilot — Stronger Farmers, Stronger Economy | Sector-specific measures | BO |
| Farm Finance — concessional loans | Sector-specific measures | BO |
| Farm Management Deposits Scheme | Sector-specific measures | TE |
| Film industry offsets | Industry-specific measures | TE |
| Fisheries Research and Development | Rural R&D measures | BO |
| Fisheries Resources Research Fund | Rural R&D measures | BO |
| Forest and Wood Products Research and Development | Rural R&D measures | BO |
| Grains Research and Development | Rural R&D measures | BO |
| Grape and Wine Research and Development | Rural R&D measures | BO |
| High Costs Claims Scheme | Industry-specific measures | BO |
| Horticulture Research and Development | Rural R&D measures | BO |
| ICT Centre of Excellence | General R&D measures | BO |
| Illawarra Region Innovation and Investment Fund | Other measures | BO |
| Improved Access to Agricultural and Veterinary Chemicals — A Competitive Agricultural Sector | Sector-specific measures | BO |
| Income tax averaging provisions | Sector-specific measures | TE |
| Indigenous Carbon Farming Fund | Other measures | BO |
| Industry Growth Centres | Sector-specific measures | BO |
| Innovation Investment Fund | General R&D measures | BO |
| Managing Farm Risk Program — Stronger Farmers, Stronger Economy | Sector-specific measures | BO |
| Manufacturing Transition Grants Programme | Sector-specific measures | BO |
| Meat and Livestock Research and Development | Rural R&D measures | BO |
| National Low Emissions Coal Initiative | Industry-specific measures | BO |
| National Urban Water and Desalination Plan | Industry-specific measures | BO |
| New Aircraft Combat Capability | Industry-specific measures | BO |
| Next Generation Manufacturing Investment Programme | Sector-specific measures | BO |
| Offshore banking unit tax concession | Industry-specific measures | TE |
| Other Exotic Disease Preparedness Program | Industry-specific measures | BO |
| Payment scheme for Airservices Australia's en route charges | Industry-specific measures | BO |
| Pig Research and Development | Rural R&D measures | BO |
| Premium Support Scheme | Industry-specific measures | BO |
| Product Stewardship for Oil Program | Industry-specific measures | BO |
| R&D Tax Incentive — non-refundable tax offset | General R&D measures | TE |
| R&D Tax Incentive — refundable tax offset | General R&D measures | BO |
| R&D tax offset payments — exemption | General R&D measures | TE |
| Regional Equalisation Plan | Industry-specific measures | TE |

(Continued next page)

Table 3.2 **(continued)**

| *Program* | *Category* | *Form*[b] |
|---|---|---|
| Rural Financial Counselling Service | Sector-specific measures | BO |
| Rural Industries Research and Development | Rural R&D measures | BO |
| Screen Australia | Industry-specific measures | BO |
| Skilling Australian Defence Industry | Industry-specific measures | BO |
| Small Business — Simplified depreciation rules | Other measures | TE |
| Small business capital gains tax 15-year asset exemption | Other measures | TE |
| Small business capital gains tax 50 per cent reduction | Other measures | TE |
| Small business capital gains tax retirement exemption | Other measures | TE |
| Small business capital gains tax rollover deferral | Other measures | TE |
| Sugar Research and Development | Rural R&D measures | BO |
| Support for Small Exporters — A Competitive Agricultural Sector | Sector-specific measures | BO |
| Sustainable Rural Water Use and Infrastructure Program | Sector-specific measures | BO |
| Tasmanian Freight Equalisation Scheme | Other measures | BO |
| Tasmanian Jobs and Growth Package | Other measures | BO |
| Tasmanian Jobs and Investment Fund | Other measures | BO |
| Tax deduction for conserving or conveying water | Sector-specific measures | TE |
| Tax deductions for grape vines | Industry-specific measures | TE |
| Tax incentives for film investment | Industry-specific measures | TE |
| Taxation assistance for victims of Australian natural disasters | Other measures | TE |
| TCF corporate wear program | Other measures | TE |
| Tourism Australia | General export measures | BO |
| Toyota Major Facelift Vehicle and Supplier Grant | Industry-specific measures | BO |
| TRADEX | General export measures | TE |
| Venture capital limited partnerships | Industry-specific measures | TE |
| Victorian Innovation and Investment Fund — Ford Assistance | Sector-specific measures | BO |
| Wool Research and Development | Rural R&D measures | BO |

[a] Programs included in the budgetary assistance estimates published in the *Trade & Assistance Review 2015-16* (PC 2017). [b] BO: budgetary assistance, TE: tax expenditure.

*Source*: Commission estimates.

# 4 Re-benchmarking the Commission's assistance estimates

The assistance estimates published in *Trade & Assistance Review 2015-16* are the first in a new series based on the 2013-14 input-output tables and import shares as the benchmark (reflecting the structure of the economy, which stays fixed for the series). The Commission's previous four series have been benchmarked to 1996-97, 2001-02, 2004-05 and 2008-09, respectively. The benchmarking of the assistance estimates to the 2013-14 input-output tables follows closely the methodology adopted for the 2008-09 re-benchmarking exercise. This chapter sets out the main steps and conventions adopted in the updating and assistance estimation process.

## 4.1 Updating the underlying input-output data to the ABS 2013-14 tables

The calculation of effective rates of (tariff) assistance requires data on industry inputs, or 'cost structures'. In the formative years of assistance estimation the Commission benchmarked its estimates to economic census and survey information. From 2001-02, the assistance estimation methodology for manufacturing and agriculture was integrated and benchmarked to ABS input–output tables (box 4.1).

## 4.2 Modifications to ABS input-output data

Some aspects of the construction of ABS input–output tables have reduced their usefulness for estimating effective rates of assistance. These are primarily a consequence of the ABS collecting statistical data at a higher level of aggregation that limits the availability of data for separating industries out into more homogeneous activities (Gretton 2005).[14] As a consequence of the change in ABS statistical unit conventions, the amount of 'off-diagonal production' of commodities reported in input-output tables increased materially from 1996-97.[15]

[14] Input-output tables up to the reference year 1993-94 were based on data collected at the establishment level. Subsequent input-output tables have been based on data collected at the business unit or enterprise level (ABS 2012).

[15] In the input-output tables, each industry produces a 'predominant' commodity but often also some 'additional' commodities. For example, paper stationery and other converted paper products are produced mainly by the Paper stationery and other converted paper products industry but some are also produced by the Sawmill product industry. Similarly, the Petroleum and coal industry is recorded as producing some iron and steel products besides its predominant petroleum and coal commodities.

## Box 4.1 Cost structures information

### Manufacturing estimates

Prior to 2000, ABS manufacturing census data was used to derive measures of inputs and outputs for manufacturing industries.

ABS input-output cost-structure data for 1994-95 were used for the *Trade & Assistance Review 1999–2000* and *Trade & Assistance Review 2000-01*.

The input-output data were updated to 1996-97 for the manufacturing estimates published in *Trade & Assistance Review 2001-02*. The ABS data were also adjusted to incorporate the Commission's preferred treatment of transport margins — see Methodological Annex A to that Review.

The input-output benchmark for the assistance estimates updated to 2001-02 was first published in the *Trade & Assistance Review 2005-06*. For the 2001-02 series, the Commission reclassified manufacturing work undertaken by wholesale and retail service industries to the manufacturing sector so as to maintain comparability with the previous series of estimates (see the Methodological Annex to the *Trade & Assistance Review 2005-06* and *2006-07*).

The input-output benchmark updated to 2004-05 was first published in the *Trade & Assistance Review 2008-09*. For the 2004-05 series, the Commission carried out a more comprehensive modification of the ABS input-output data to further enhance comparability with earlier series of estimates (see Methodological Annex to the 2008-09 *Review*).

The input-output benchmark updated to 2008-09 was first published in the *Trade & Assistance Review 2011-12*. For the 2008-09 series, the Commission reported the estimates according to the latest ANZSIC industry classification — ANZSIC 2006 — and introduced further adjustments to the data and methodology used (see *Methodological Annex to the 2011-12 Review*).

### Agricultural estimates

Prior to 2001, a combination of ABARE farm survey and ABS agricultural finance survey and commodities data were used to derive measures of inputs and outputs by agricultural commodity. For the '1996-97 series' introduced in *Trade & Assistance Review 2001-02*, the Commission adopted a cost-structure for agriculture based on the average of four years input-output data: 1992-93, 1993-94, 1994-95 and 1996-97. Multiple years were selected in order to reduce the impact of the often cyclical nature of agricultural production. A single year approach was adopted for the '2001-02' series of assistance estimates, as the Commission had found that estimates for the 2001-02 (and subsequently 2004-05, 2008-09 and 2013-14) series using a single year of agricultural data was not significantly different from those based on an average of a number of years.

The ABS made adjustments to earlier input-output tables to improve the homogeneity of industries. However, these adjustments have largely been discontinued in more recent editions of the input–output tables. More specifically, the ABS has discontinued the practice of 'grossing–up' (adjusting of) manufacturing work undertaken by other industries on a commission or fee–for–service basis — as commission work involves one industry (such as wholesale or retail trade) engaging another industry (usually a manufacturing industry) to produce output on its behalf (frequently using inputs supplied by the commissioning industry) — whereby the commissioned output is reclassified from the commissioning industry to the producing industry.

The ABS has also discontinued the practice of 're–defining' secondary production — whereby secondary production is 'allocated' to the *industry* in which the activity is primarily undertaken, so as to improve industry 'homogeneity' (under this convention, wholesaling work undertaken by manufacturers would be re-defined in the input–output tables from the manufacturing sector to wholesale trade).

For the Commission's assistance estimates, the use of (unadjusted) published data could give rise to estimated changes in effective rates of assistance between series without *any* statutory changes in tariffs or budgetary assistance.[16] For example, for both the *Textile, leather, clothing and footwear* and *Motor vehicles and parts* industries, the relative importance of secondary production (such as wholesale trade) has increased in recent published series. As there are no tariffs on wholesale trade, the change in statistical conventions alone would dilute the reported level of tariff protection afforded to the relevant manufacturing activities across assistance series.

With the objective of maintaining comparability across series and maintaining the industry homogeneity assumptions that underpin the input–output tables, following the methodology established for the previous series, the Commission adjusts the published ABS input–output tables. The process has been carried out in two parts — first, a 'grossing up' adjustment (to address commissioned work) and then, a 'full redefinition' of the ABS's input–output industry groupings (to address secondary production).

The grossing up adjustment involves removing petroleum produced on behalf of the Wholesale trade industry from *Wholesale trade*, together with the crude oil and other inputs purchased by wholesalers to produce this output, and then adding this production and associated inputs to the *Petroleum and coal products* industry (box 4.2).[17] In the 2008-09 year, the adjustment reduced *Wholesale trade* industry production by around \$3.5 billion (or around 3 per cent of *Wholesale trade* production), and increased *Petroleum and coal products* output by the same dollar amount. The adjustment accounted for around 11 per cent of the (adjusted) output of the *Petroleum and coal products* industry.

[16] Increasing off-diagonal production can lead to changes in effective rates of assistance between series even where tariffs or budgetary assistance remain unchanged. This is especially the case where production shifts from traditionally more highly assisted industries, such *Textiles, clothing and footwear*, to more lowly assisted industries like *Wholesale trade* (and vice versa).

[17] There are other examples of commission work that, in principle, could also be similarly adjusted, but were not adjusted for the 2008-09 or 2013-14 update, including, meat processing undertaken on commission for predominantly retail enterprises.

Box 4.2 **Grossing up: shifting petroleum production from the wholesale industry to the petroleum industry**

The grossing up adjustment involves carrying out modifications to both the supply and use tables of the ABS input-output framework.

For the supply table (table 1), the grossing up adjustment involved two steps:

- shifting all petroleum products (IOPC code 17010010: *Automotive petrol; gasoline refining or blending; motor spirit (including aviation spirit)*) produced by the *Wholesale trade* industry (IOIG 3301) to the *Petroleum and coal products* industry (IOIG 1701)
- reducing income derived from contract refining (IOPC 17091700: *Petroleum and coal products – commission production* (1701-1709)), by the *Petroleum and coal products* industry by the amount spent on contract refining (IOPC 17091700) by the *Wholesale trade* industry (derived from the use table).

For the use table (table 2), the grossing up adjustments included a number of steps:

- shifting all crude oil (used to manufacture petroleum) (IOPC 07000010: *Crude oil (incl. condensate))* from the *Wholesale trade* industry to the *Petroleum and coal products* industry
- setting the cost of contract refining (IOPC 17091700: *Petroleum and coal products – commission production* (1701-1709)) or commission work paid by the *Wholesale trade* industry to have petroleum produced on its behalf (by the *Petroleum and coal products* industry) equal to zero
- adjusting all other inputs used by the *Wholesale trade* industry in equal proportion such that the reduction in *Wholesale trade* industry production (equal to the amount of petroleum refining it commissioned) is equal to the reduction in usage of all inputs (that is, crude oil and other inputs) used to produce petroleum and shifting these inputs to the *Petroleum and coal products* industry.

The full redefinition involves reclassifying all remaining secondary production to the industry in which the activity is primarily undertaken. For example, all footwear-related products, not recorded as being produced by the ABS Input-Output Industry Group (IOIG) *Footwear manufacturing* industry, were reclassified back to the *Footwear manufacturing* industry. This adjustment to industry outputs was performed on the detailed 114 industry by 1267 product supply table (which denotes the production of each commodity by each industry). Some significant examples of this adjustment include the shifting of wholesale activity undertaken in the manufacturing and other non-wholesale trade industries to the *Wholesale trade* industry and shifting all clothing production by non-clothing industries (particularly *Wholesale* and *Retail trade*) to the IOIG *Clothing manufacturing* industry.

As a result of these adjustments, inputs used in production also need to be adjusted (table 2 of the ABS's Input–Output data). Ideally, the adjustments to the inputs would reflect the production technology of the goods. However, detailed information on the inputs used to produce the secondary production is not available. The Commission has therefore adjusted the inputs used in each of the 114 industry groups in proportion to the change in production for each industry by reallocating intermediate and primary inputs in proportion to the reallocation of outputs (that is, the industry technology assumption is adopted to re–allocated inputs). For example, where IOIG *Clothing manufacturing* industry output declines by

10 per cent then the clothing industry's usage of inputs is also reduced by 10 per cent. Those inputs are added to the inputs of the industry to which the output is redefined.

Conversely, a 5 per cent increase in metal products output results in a 5 per cent increase in the usage of inputs by the *metal products* industry. Those inputs would be transferred from the industry initially recorded as producing the output.

It is important to note in this redefinition process, that the total usage of inputs across all industries is unchanged as inputs are only reallocated between industry groups in proportion to the changes in outputs. As no net change in total industry output occurs, there is also no net change in the total usage of inputs by industry.

These processes are undertaken by the ABS on request from the Commission using the more detailed (unpublished) input–output data tables and using programs provided by the Commission. Summary non-confidential results were provided to the Commission for inclusion in its assistance estimates.

The impact of modifying the 2013-14 ABS input–output tables on the effective rates of assistance for the Commission's ANZSIC–based industry groupings in 2015-16 is presented in table 4.1. Most notably, estimated effective rates for the *Motor vehicles and parts* industry increased from 8 per cent to 9.5 per cent and *Printing and recorded media* industry increased from 1.2 per cent to 2.2 per cent. The estimated effective rate of assistance for the Textile, leather, clothing and footwear industry increased from 3.2 per cent to 4 per cent, while the effective rate for the *Dairy cattle farming* industry decreased from 2.4 per cent to 1.4 per cent.

## 4.3 Updating import data to 2013-14

The Commission uses ABS import data, together with Customs tariff rate information, to derive estimates of the price impacts of tariffs for both output and input goods (see chapter 3). These results are then combined with ABS input–output data to derive GSE and TEM estimates and in turn NSE estimates of tariff assistance.

For the new series of assistance estimates, the Commission has updated the ABS import data from 2008-09 to 2013-14 to align with the ABS input–output data used.

The use of 2013-14 ABS import data has also involved updating the estimated ad valorem tariff rates for specific-rate tariff items. Excluding excise tariff items, there are currently five tariff items (at the 8-digit classification level) that have a specific tariff rate rather than the more common ad valorem tariff rate. These items relate to imports of cheese and curd (mostly cheddar cheese) and, since 1 January 2000, have a specific tariff rate of $1.22 per kilogram or $1220 per tonne. As all tariff rates in the Commission's Tariff and Import Database Estimating System (TIDES) model are expressed in ad valorem terms, each specific rate tariff item was converted to an ad valorem tariff rate based on 2013-14 import quantities and values (table 4.2).

Table 4.1 **Impact of input-output table modifications on effective rates of combined assistance, 2015-16**

Per cent

| *Industry* | *ABS 2013-14 input-output tables* | *Commission modified ABS 2013-14 input-output tables* | *Percentage point difference in effective rates* |
|---|---|---|---|
| **Primary production**[a] | **2.7** | **2.8** | ***0.1*** |
| Horticulture and fruit growing | 2.0 | 2.6 | *0.6* |
| Sheep, beef cattle and grain farming | 3.2 | 3.4 | *0.2* |
| Other crop growing | 2.6 | 1.9 | *-0.7* |
| Dairy cattle farming | 2.4 | 1.4 | *-0.9* |
| Other livestock farming | 0.6 | 0.6 | *0.0* |
| Aquaculture and fishing | 2.8 | 2.8 | *0.0* |
| Forestry and logging | 2.1 | 2.2 | *0.0* |
| Primary production support services | 0.0 | 0.0 | *0.0* |
| **Mining** | **0.2** | **0.2** | ***0.0*** |
| **Manufacturing**[a] | **3.5** | **3.8** | ***0.2*** |
| Food, beverages and tobacco | 3.1 | 3.3 | *0.2* |
| Textile, leather, clothing and footwear | 3.2 | 4.0 | *0.8* |
| Wood and paper products | 4.7 | 5.0 | *0.3* |
| Printing and recorded media | 1.2 | 2.2 | *1.0* |
| Petroleum, coal, chemical and rubber products | 2.3 | 2.5 | *0.2* |
| Non-metallic mineral products | 2.8 | 2.9 | *0.1* |
| Metal and fabricated metal products | 4.0 | 4.0 | *0.0* |
| Motor vehicles and parts | 8.0 | 9.5 | *1.5* |
| Other transport equipment | 3.3 | 3.4 | *0.1* |
| Machinery and equipment manufacturing | 2.6 | 2.7 | *0.1* |
| Furniture and other manufacturing | 4.0 | 4.6 | *0.7* |

**a** Sectoral estimates include assistance to the sector that has not been allocated to specific industry groupings.

*Source*: Commission estimates.

Table 4.2 **Specific-rate tariff items converted to an ad valorem basis, 2015-16**

| *Description* | *Tariff code* | *Specific tariff rate* | *Implied ad valorem rate* |
|---|---|---|---|
| | | $/kg | % |
| Fresh cheese | 04061000 | 1.22 | 17.4 |
| Grated cheese | 04062000 | 1.22 | 22.0 |
| Processed cheese | 04063000 | 1.22 | 21.8 |
| Blue-veined cheese | 04064090 | 1.22 | 7.9 |
| Other cheese | 04069090 | 1.22 | 19.1 |

*Source*: Commission estimates based on Australian Customs and ABS trade data.

## 4.4 Tariff rate data — services sector adjustment

In deriving the price impacts of tariffs for both output and input goods, the Commission uses an ABS concordance from the trade classification to the ABS input-output product classification. This concordance maps imports of merchandise goods (around 5650 items or product categories) to the corresponding categories in the ABS's input-output product classification (1267 products).

Direct application of the ABS concordance between the merchandise traded goods and the ABS input-output classification would result in a non–zero average tariff rate for some broad service industry groupings (table 4.3). Such 'average' tariff rates would not be considered representative of the majority of the main service activities in that industry grouping. For example, the ABS partly classifies re-imported medical waste products as *Health care and social assistance* services. Direct application of the concordance would generate a non-zero average tariff rate for the entire *Health care and social assistance* services grouping.

Thus, following the practice adopted in previous series, the 2013-14 series has set tariff rates on merchandise products mapped to services industries by the ABS equal to zero. The services industries involved were: *Property, professional and administrative services*; *Public administration and safety*; and *Health care and social assistance* services.

Table 4.3 **ABS mapping of tariff items to service industry groups**

| *Tariff item description* | *Tariff code* | *Tariff rate* | *Service industry groups* |
|---|---|---|---|
| | | % | |
| Vegetable saps and extracts of hops | 13021300 | 5 | Public administration and safety |
| Oleoresin of ginger (gingerin) | 13021910 | 5 | Public administration and safety |
| Municipal waste | 38251000 | 5 | Property, professional and administration services; and Public administration and safety |
| Clinical waste — wadding, gauze and bandages | 38253011 | 5 | Property, professional and administration services; and Health care and social assistance |
| Clinical waste — other | 38253090 | 5 | Property, professional and administration services; and Health care and social assistance |
| Australian telephone directories and Australian timetables | 49019910 | 5 | Information media and telecommunications |

*Source*: Commission estimates based on Australian Customs tariff schedules and ABS data.

## 4.5 Coverage of budgetary assistance estimates

For the 2013-14 series of assistance estimates, the Commission has continued to update the coverage of budgetary measures to reflect the introduction of new programs by the government, the inclusion of some previously unidentified or omitted assistance measures, and improvements in data availability.

The measures that were newly included in *Trade & Assistance Review 2015-16* are set out in table 4.4 and discussed in more detail below. Other budgetary assistance measures that have been announced for 2016-17 and beyond, but are yet to be included in the assistance measures are summarised in appendix B of the 2015-16 *Review*.

Table 4.4 **Budgetary measures added to the assistance estimates for *Trade & Assistance Review 2015-16***
$ million (nominal)

| *Program* | *Form*[a] | *Industry allocation* | *Assistance value 2015-16* |
|---|---|---|---|
| | | | *$m* |
| Automotive Diversification Programme | BO | Motor vehicles and parts | 8.8 |
| Industry Growth Centres | BO | Mining; Food, beverages and tobacco; Unallocated manufacturing | 23.6 |
| Bindaree Beef assistance | BO | Food, beverages and tobacco | 11.1 |
| Victorian Innovation and Investment Fund — Ford Assistance | BO | Food, beverages and tobacco; Wood and paper products; Petroleum, coal, chemical and rubber products; Non-metallic mineral products; Metal and fabricated metal products; Motor vehicles and parts; Other transport equipment; Machinery and equipment manufacturing; Furniture and other manufacturing; Wholesale trade; Retail trade; Property, professional and administrative services | 8.7 |
| Toyota Major Facelift Vehicle and Supplier Grant | BO | Motor vehicles and parts | 2.1 |
| Australian Government Innovation and Investment Fund — Tasmania | BO | Horticulture and fruit growing; Other crop growing; Other livestock farming; Aquaculture and fishing; Food, beverages and tobacco; Textile, leather, clothing and footwear; Wood and paper products; Petroleum, coal, chemical and rubber products; Metal and fabricated metal products; Other transport equipment; Construction; Wholesale trade; Accommodation and food services; Transport, postal and warehousing; Property, professional and administrative services | 5.0 |

(Continued next page)

Table 4.4 **(continued)**

| *Program* | *Form*[a] | *Industry allocation* | *Assistance value 2015-16* |
|---|---|---|---|
| Manufacturing Transition Grants Programme | BO | Petroleum, coal, chemical and rubber products; Non-metallic mineral products; Metal and fabricated metal products; Motor vehicles and parts; Machinery and equipment manufacturing; Furniture and other manufacturing; Property, professional and administrative services | 21.4 |
| Entrepreneurs' Infrastructure Programme — Accelerating Commercialisation | BO | Sheep, beef cattle and grain farming; Aquaculture and fishing; Primary production support services; Mining; Food, beverages and tobacco; Petroleum, coal, chemical and rubber products; Metal and fabricated metal products; Other transport equipment; Machinery and equipment manufacturing; Furniture and other manufacturing; Electricity, gas, water and waste services; Construction; Retail trade; Information, media and telecommunications; Financial and insurance services; Property, professional and administrative services; Education and training; Health care and social assistance; Other services | 36.0 |
| Entrepreneurs' Infrastructure Programme — Business Management Skills | BO | Horticulture and fruit growing; Aquaculture and fishing; Forestry and logging; Primary production support services; Mining; Food, beverages and tobacco; Textile, leather, clothing and footwear; Wood and paper products; Printing and recorded media; Petroleum, coal, chemical and rubber products; Non-metallic mineral products; Metal and fabricated metal products; Motor vehicles and parts; Other transport equipment; Machinery and equipment manufacturing; Furniture and other manufacturing; Electricity, gas, water and waste services; Construction; Wholesale trade; Retail trade; Accommodation and food services; Transport, postal and warehousing; Information, media and telecommunications; Financial and insurance services; Property, professional and administrative services; Education and training; Health care and social assistance; Arts and recreation services; Other services; Unallocated other | 10.5 |
| Tasmanian Economic Diversification Projects — OfficeMax | BO | Information, media and telecommunications | 0.6 |

(Continued next page)

Table 4.4 **(continued)**

| *Program* | *Form*[a] | *Industry allocation* | *Assistance value 2015-16* |
| --- | --- | --- | --- |
| Concessional taxation for small business — Lower company tax rate | TE | Unallocated other | 250.0 |
| Australian Tropical Medicine Commercialisation Grants | BO | Petroleum, coal, chemical and rubber products | 7.0 |
| Next Generation Manufacturing Investment Programme | BO | Food, beverages and tobacco; Textile, leather, clothing and footwear; Wood and paper products; Petroleum, coal, chemical and rubber products; Non-metallic mineral products; Metal and fabricated metal products; Motor vehicles and parts; Machinery and equipment manufacturing; Furniture and other manufacturing; Property, professional and administrative services; Public administration and safety | 13.8 |
| Tasmania Jobs and Investment Fund | BO | Horticulture and fruit growing; Aquaculture and fishing; Forestry and logging; Primary production support services; Food, beverages and tobacco; Textile, leather, clothing and footwear; Wood and paper products; Petroleum, coal, chemical and rubber products; Metal and fabricated metal products; Other transport equipment; Unallocated manufacturing; Construction; Retail trade; Accommodation and food services; Transport, postal and warehousing; Education and training; Other services; Unallocated services | 5.0 |
| Asialink Business | BO | Unallocated other | 3.4 |
| Boosting Farm Profits Through Rural R&D — A Competitive Agricultural Sector | BO | Unallocated primary production | 29.3 |
| Improved Access to Agricultural and Veterinary Chemicals — A Competitive Agricultural Sector | BO | Unallocated primary production | 1.7 |
| Support for Small Exporters — A Competitive Agricultural Sector | BO | Unallocated primary production | 2.3 |
| Managing Farm Risk Program — Stronger Farmers, Stronger Economy | BO | Unallocated primary production | <0.1 |
| Farm Co-operatives and Collaboration Pilot — Stronger Farmers, Stronger Economy | BO | Unallocated primary production | 0.7 |
| Funding for major films — The Wolverine | BO | Arts and recreation services | 12.8[b] |

[a] BO: budgetary outlay. TE: tax expenditure. [b] Assistance value 2011-12.

*Source*: Commission estimates.

## Programs added to the assistance estimates in 2015-16

This section describes Australian Government budgetary programs, including both new and existing programs, added to the assistance estimates for *Trade & Assistance Review 2015-16*.

### Automotive Diversification Program

The Automotive Diversification Programme (ADP) provides $20 million in Australian Government funding over four years to support projects that supply products or services to customers in the Australian and international non-automotive industry, and the international automotive industry. Grants provided under the program are competitive and merit-based (DIIS 2017c).

The ADP is intended to help Australian automotive supply chain companies to diversify out of the domestic automotive manufacturing sector. Companies can apply for a grant to help with capital equipment costs. The ADP aims to retain manufacturing capability in Australia.

The ADP is part of the $155 million Growth Fund, established to support employees, businesses and regions affected by the closure of Australia's car manufacturing industry.

The value of Australian Government administered expenses for 2015-16 was $8.8 million (DIIS 2017a).

The programs is assessed as initially benefiting businesses engaged in automotive manufacturing activities and has been allocated to the *Motor vehicles and parts* industry grouping.

### Industry Growth Centres

The Industry Growth Centres Initiative is an industry–led approach intended to drive innovation, productivity and competitiveness by focusing on areas of competitive strength and strategic priority. It is intended that the initiative will help Australia transition into smart, high value and export focused industries by enabling national action on issues such as collaboration, commercialisation, international engagement, skills and regulation reform (DIIS 2017e).

The Initiative is on–going with $250 million in Australian Government funding over the four years to 2019-20. The Initiative will establish Growth Centres to help deliver the initiative in six industry sectors:

- Advanced Manufacturing
- Cyber Security
- Food and Agribusiness
- Medical Technologies and Pharmaceuticals

- Mining Equipment, Technology and Services
- Oil, Gas and Energy Resources.

The value of Australian Government administered expenses for 2015-16 was $23.6 million (DIIS 2017a).

The Department of Industry, Innovation and Science (DIIS) provides data on government expenditure for the Industry Growth Centres Initiative. This information has been used to allocate funding from the initiative to the Commission's ANZSIC–based industry groupings.

### Bindaree Beef assistance

In 2013, the Australian Government announced a $23 million grant to Bindaree Beef towards the construction of a biogas project. The project is intended to reduce Bindaree Beef's carbon emissions below the then Government's 25 000 tonne direct carbon tax threshold. The project involves installing a more energy–efficient rendering plant and directing all organic waste through a digester to produce clean energy from biogas. It is intended that using waste to generate clean energy would allow Bindaree Beef to remove a coal-fired boiler and cut electricity consumption by half (BC 2013).

The value of Australian Government administered expenses for 2015-16 was $11.1 million (DIIS 2017a).

The program is assessed as initially benefiting businesses engaged in meat processing activities and has been allocated to the *Food, beverages and tobacco products* industry grouping.

### Victorian Innovation and Investment Fund — Ford Assistance

The Victorian Innovation and Investment Fund incorporates the Geelong Region Innovation and Investment Fund and the Melbourne's North Innovation and Investment Fund. These funds have previously been included in the Commission's Budgetary Assistance estimates.

The Fund is intended to support 'innovative' job creation projects that strengthen and diversify the regions (Geelong and Melbourne's North) affected by Ford Motor Company of Australia's cessation of vehicle and engine manufacturing operations in Australia (DIIS 2017g).

The value of Australian Government administered expenses for 2015-16 was $8.7 million (DIIS 2017a).

The Department of Industry, Innovation and Science (DIIS) provides data on government expenditure for the Victorian Innovation and Investment Fund. This information has been used to allocate funding from the program to the Commission's ANZSIC–based industry groupings.

### Toyota Major Facelift Vehicle and Supplier Grant

In 2013, the Australian Government announced it would provide Toyota Australia with a $23.6 million grant towards its then announced $123 million investment in its local manufacturing operations. An undisclosed grant was also provided by the Victorian State Government. In February 2014, it was announced that Toyota would cease manufacturing vehicles and engines in Australia by the end of 2017 (Carr 2013).

The value of Australian Government administered expenses for 2015-16 was $2.1 million (DIIS 2017a).

The program benefits Toyota Australia which is engaged in the automotive industry and has been allocated to the *Motor vehicles and parts* industry grouping.

### Australian Government Innovation and Investment Fund — Tasmania

The Australian Government's Innovation and Investment Fund is intended to encourage economic growth and jobs in Tasmania by assisting Tasmanian business investment. The Fund supports new projects that create viable business growth and job opportunities that contribute to strengthening Tasmania's economy. Total funding of up to $13 million is available under the program, while the minimum grant available is $50 000. There is no maximum grant limit within the total grant funding (DIIS 2017b).

The value of Australian Government administered expenses for 2015-16 was $5 million (DIIS 2017a).

The Department of Industry, Innovation and Science provides data on government expenditure for the Australian Government's Innovation and Investment Fund. This information has been used to allocate funding from the program to the Commission's ANZSIC–based industry groupings.

### Manufacturing Transition Grants Programme

The Manufacturing Transition Programme provides manufacturing businesses with grant funding intended to make these businesses more competitive and viable. It supports capital investment projects that help businesses:

- move or expand into higher value and/or niche manufacturing activities
- build skills in higher value and knowledge intensive activities in new or growing markets.

Grant funding is available for up to a maximum of 25 per cent of eligible project costs. The minimum grant available is $1 million, while the maximum grant amount is $10 million and the maximum grant period is 2 years, although a further 6 month extension may be approved (DIIS 2017f).

The value of Australian Government administered expenses for 2015-16 was $21.4 million (DIIS 2017a).

The Department of Industry, Innovation and Science provides data on government expenditure for the Manufacturing Transition Grants Programme. This information has been used to allocate funding from the program to the Commission's ANZSIC–based industry groupings.

### Entrepreneurs' Programme — Accelerating Commercialisation and Business Management Skills

The Entrepreneurs' Programme is an Australian Government initiative intended to improve business competitiveness and productivity. It forms part of the Australian Government's National Innovation and Science Agenda. The program provides support to businesses through:

- Accelerating Commercialisation — provides co-funded grants to small and medium sized businesses, entrepreneurs and researchers to commercialise novel products, services and processes
- Business Management Skills — experienced Business Advisers and Facilitators review business operations, including business direction, strategy, growth opportunities and supply chain (DIIS 2017d).

The value of Australian Government administered expenses for 2015-16 was $46.5 million (DIIS 2017a).

The Department of Industry, Innovation and Science provides data on government expenditure for the Entrepreneurs' Infrastructure Program. This information has been used to allocate funding from the program to the Commission's ANZSIC–based industry groupings.

### Tasmanian Economic Diversification Projects — OfficeMax

In 2013, the Australia Government announced that it would provide $600 000 in funding towards employing an additional 70 staff at the OfficeMax call centre at Derwent Park in Tasmania. Assistance was also provided by the Tasmanian State Government (Gillard 2013).

The value of Australian Government administered expenses for 2013-14 was $0.6 million (DIIS 2017a). This program would normally have been included in the 2013-14 *Review* but had been previously overlooked.

The program is assessed as initially benefiting the OfficeMax call centre, a telecommunications activity, and has been allocated to the *Information, media and telecommunications* industry grouping.

### Concessional taxation for small business — Lower company tax rate

In the 2016-17 Budget, the Australian Government announced it would progressively reduce the corporate tax rate from 30 per cent to 25 per cent. For the 2015-16 income year, the company tax rate was reduced to 28.5 per cent for companies with an aggregated annual turnover of less than $2 million. From the 2016-17 income year, the company tax rate will be lowered to 27.5 per cent for companies with turnover of less than $10 million. In 2017-18 and 2018-19 income years, the annual turnover threshold will be increased to $25 million and $50 million, respectively. The tax rate will also be progressively reduced to 25 per cent (Australian Government 2017).

The value of the Australian Government tax concession for 2015-16 was $250 million (Australian Government 2017).

This concession is assessed as initially benefiting small businesses. However, information on the specific industry incidence of the concession has not been readily available. Accordingly, the tax concession has been classified to the *Unallocated other* industry grouping.

### Australian Tropical Medicine Commercialisation Grants

In 2015, the Australian Government announced the Australian Tropical Medicine Commercialisation (ATMC) program. The program provides $8.5 million in funding to develop pathways to commercialise Australian research on new tropical therapeutics, vaccines and diagnostics in partnership with international companies. Its aim is to build connections between Australian research institutes and global players in the health sector, including pharmaceutical companies and philanthropic organisations (Austrade 2017).

The value of Australian Government administered expenses for 2015-16 was $7 million (Austrade 2017).

The program is assessed as initially benefiting firms predominately in the pharmaceutical manufacturing and commercialisation activities, and has been allocated to the *Petroleum, coal, chemical and rubber products* industry grouping.

### Next Generation Manufacturing Investment Programme

The $90 million Next Generation Manufacturing Investment Program is intended to help businesses investing in capital projects, to establish or expand high value manufacturing operations in South Australia and Victoria. The program is part of the Australian Government's $155 million Growth Fund, established in 2014 to support employees, businesses and regions affected by the closure of Australia's car manufacturing industry by 2017. The Victorian and South Australian State Governments have each contributed $12 million to grants under the program (DIIS 2017h).

The value of Australian Government administered expenses for 2015-16 was $13.8 million (DIIS 2017a).

The Department of Industry, Innovation and Science provides data on government expenditure for the Next Generation Manufacturing Investment Program. This information has been used to allocate funding from the program to the Commission's ANZSIC–based industry groupings.

### Tasmania Jobs and Investment Fund

The Tasmania Jobs and Investment Fund is a $24 million grant based program intended to help businesses grow and create jobs in Tasmania. The Fund is intended to support new projects that create sustainable business investment and job opportunities that will contribute to the strengthening of Tasmania's economy. The fund is competitive and merit based, and available to all industry sectors, including advanced manufacturing, tourism, agriculture and aquaculture. The minimum grant amount is $50 000 and there is no maximum grant amount, but grants must be within the limit of $24 million total available funds (DIIS 2017i).

The value of Australian Government administered expenses for 2015-16 was $5 million (DIIS 2017a).

The Department of Industry, Innovation and Science provides data on government expenditure for the Tasmania Jobs and Investment Fund. This information has been used to allocate funding from the program to the Commission's ANZSIC–based industry groupings.

### Asialink Business

The Asialink Business program is intended to provide tailored solutions to help businesses access the potential of diverse Asian markets. The program intends to equip organisations in all sectors to become Asia ready by developing the critical skills, knowledge and networks needed to engage with the complexities of the region (Asialink Business 2017).

The value of Australian Government administered expenses for 2015-16 was $3.4 million (DIIS 2017a).

Information on the industry incidence of the program has not been readily available. Accordingly, the budgetary outlay has been classified to the *Unallocated other* industry grouping in the Commission's ANZSIC–based industry classification.

### Boosting Farm Profits through Rural R&D — A Competitive Agricultural Sector

In 2013, the Australian Government announced it would provide an additional $100 million over four years to fund research in partnership with Rural Research and Development Corporations. The funding provides grants for research projects that focus on delivering cutting edge technologies and applied research, with an emphasis on how the research outcomes would be used by farmers. The program will require research to be done collaboratively between Rural Research and Development Corporations and one or more research providers with a financial contribution from one or more of the parties required (Australian Government 2014).

The value of Australian Government administered expenses for 2015-16 was $29.3 million (DAWR 2016).

The program is assessed as initially benefiting primary production activities. However, information on the specific industry incidence of the program has not been readily available. Accordingly, the budgetary outlay has been classified to the *Unallocated primary production* industry grouping.

### Improved Access to Agricultural and Veterinary Chemicals — A Competitive Agricultural Sector

In 2013, the Australian Government announced it would provide $8 million over four years to improve access by farmers for minor use agricultural and veterinary chemicals. The funding is intended to support the development of tools for improving access to the chemicals identified as high priority and enhancing existing legislative and administrative arrangements to facilitate access (Australian Government 2014).

The value of Australian Government administered expenses for 2015-16 was $1.7 million (DAWR 2016).

The program is assessed as initially benefiting primary production activities. However, information on the specific industry incidence of the program has not been readily available. Accordingly, the budgetary outlay has been classified to the *Unallocated primary production* industry grouping.

### Support for Small Exporters — A Competitive Agricultural Sector

In 2013, the Australian Government announced the Support for Small Exporters Program. The program provides funding of $15 million over four years and is intended to support small exporters in sectors where there are specific export certification registration charges.

For 2014-15, funding provides eligible small exporters with a rebate of 50 per cent of their export certification registration costs, up to a maximum of $5000. From 2015-16, funding will be provided for projects that directly benefit small exporters, particularly projects to improve market access. The Government will consult the small exporter sectors on the projects to be considered (DAWR 2017c).

The value of Australian Government administered expenses for 2015-16 was $2.3 million (DAWR 2016).

The program is assessed as initially benefiting primary production activities. However, information on the specific industry incidence of the program has not been readily available. Accordingly, the budgetary outlay has been classified to the *Unallocated primary production* industry grouping.

### Managing Farm Risk Program - Stronger Farmers, Stronger Economy

In 2013, the Australian Government announced the Managing Farm Risk Program. The program provides rebates of up to $2500 intended to help farm businesses with the costs of farm insurance advice and assessments to help them manage drought and other production and market risks (DAWR 2017b).

The value of Australian Government administered expenses for 2015-16 was $9000 (DAWR 2016).

The program is assessed as initially benefiting primary production activities. However, information on the specific industry incidence of the program has not been readily available. Accordingly, the budgetary outlay has been classified to the *Unallocated primary production* industry grouping.

### Farm Co-operatives and Collaboration Pilot - Stronger Farmers, Stronger Economy

In 2013, the Australian Government announced it would introduce a Farm Co-operatives and Collaboration Pilot program intended to provide knowledge and materials on cooperatives, collective bargaining and innovative business models. The program is intended to help farmers to establish alternative business models (including cooperatives) and manage contract negotiations (Australian Government 2014).

The value of Australian Government administered expenses for 2015-16 was $0.7 million (DAWR 2017a).

The program is assessed as initially benefiting primary production activities. Information on the specific industry incidence of the program, however, has not been readily available and the program has been classified to the *Unallocated primary production* industry grouping.

### Funding for major films – Wolverine

In 2012, the Australian Government announced that it would provide a one-off grant of $12.8 million towards the production of the film 'The Wolverine' in Australia. The payment effectively provided the makers of The Wolverine with a one-off investment package equivalent to an increase in the existing Location Offset to 30 per cent (Gillard 2012).

The value of Australian Government administered expenses for 2011-12 was $12.8 million (Australian Government 2012). This program would normally have been included in an earlier edition of the *Trade & Assistance Review* but had been overlooked.

Funding for the program is assessed as initially benefiting the company 20th Century Fox in its production of the film 'The Wolverine', and has been allocated to the *Arts and recreation services* industry grouping.

## Programs previously included in the estimates that had zero assistance in 2015-16

For *Trade & Assistance Review 2015-16*, there were 17 programs which were included in the assistance estimates for 2014-15 (and earlier years where applicable), but which had zero assistance in 2015-16. Assistance provided by these programs was $229.3 million in 2014-15 (table 4.5).

## Methodological changes to the estimates in 2015-16

The methodological changes included in the assistance measurement system for the *Trade & Assistance Review 2015-16* relate to the R&D Tax Incentive scheme.

### R&D Tax Incentive

The R&D Tax Incentive scheme (the replacement scheme for the R&D tax concession and Premium R&D tax concession schemes) provides a tax offset for eligible R&D activities to encourage firms to engage in R&D that 'benefits' Australia (ATO 2017). The Incentive has two main components:

- a refundable tax offset for certain eligible entities whose aggregated turnover is less than $20 million and payable at a rate of 43.5 per cent of expenditure on eligible R&D activities
- a non-refundable tax offset for all other eligible entities payable at a rate of 38.5 per cent on eligible R&D expenditure.

The R&D Tax Incentive was first included in the Commission's assistance estimates for *Trade & Assistance Review 2013-14*, with estimates reported from 2012-13 onwards. Estimates for the scheme were sourced from the Commissioner of Taxation's annual report (ATO 2015). The estimates provided in the report were understood to include both the refundable and non-refundable components of the scheme, although neither component was published separately. In addition, the Treasury's Tax Expenditure Statement (TES) publishes an estimate of the revenue foregone for the non-refundable component of the R&D Tax Incentive. The refundable component of the scheme, however, is not separately published.

Table 4.5 **Assistance programs in 2014-15 with zero assistance in 2015-16**

$ million (nominal)

| *Program* | *Form*[a] | *Initial benefiting industry* | *Funding* |
|---|---|---|---|
| Live Animal Exports Business Assistance | BO | Sheep, beef cattle and grain farming | 0.3 |
| Drought assistance — Murray Darling Basin grants to irrigators | BO | Unallocated primary production | 0.1 |
| Digital Enterprise Program | BO | Unallocated other | 0.3 |
| Industry Skilling Program Enhancement | BO | Unallocated manufacturing | 0.2 |
| Green Car Innovation Fund | BO | Motor vehicles and parts | 0.1 |
| Coal Mining Abatement Support Package | BO | Mining | 14.0 |
| Diamond Energy Assistance | BO | Electricity, gas, water and waste services | 0.3 |
| Energy Brix Australia Corporation | BO | Electricity, gas, water and waste services | 61.4 |
| Ethanol production subsidy | BO | Petroleum, coal, chemical and rubber products | 103.5 |
| Manufacturing Technology Innovation Centre | BO | Food, beverages and tobacco; Unallocated manufacturing | 4.3 |
| Melbourne's North Innovation and Investment Fund | BO | Unallocated manufacturing | 6.2 |
| Innovation Investment Follow-on Fund | BO | Unallocated other | 0.1 |
| R&D tax concession | TE | Horticulture and fruit growing; Sheep, beef cattle and grain farming; Other crop growing; Other livestock farming; Aquaculture and fishing; Forestry and logging; Primary production support services; Mining; Food, beverages and tobacco; Textile, leather, clothing and footwear; Wood and paper products; Printing and recorded media; Petroleum, coal, chemical and rubber products; Non-metallic mineral products; Metal and fabricated metal products; Motor vehicles and parts; Other transport equipment; Machinery and equipment manufacturing; Furniture and other manufacturing; Electricity, gas, water and waste services; Construction; Wholesale trade; Retail trade; Accommodation and food services; Transport, postal and warehousing; Information, media and telecommunications; Financial and insurance services; Property, professional and administrative services; Public administration and safety; Education and training; Health care and social assistance; Arts and recreation services; Other services | 30.0 |
| Australian Paper's Maryville Pulp and Paper — Assistance | BO | Wood and paper products | 2.4 |
| TCF Structural Adjustment Scheme | BO | Textile, leather, clothing and footwear | 1.0 |
| TCF Small Business Program | BO | Textile, leather, clothing and footwear; Property, professional and administrative services | 2.6 |
| TCF Strategic Capability Program | BO | Textile, leather, clothing and footwear | 2.6 |

[a] BO: budgetary outlay. TE: tax expenditure.

*Source*: Commission estimates.

The estimate for the R&D Tax Incentive refundable tax offset, as published in the *Trade & Assistance Review 2013-14*, was therefore a derived estimate based on information provided in the Commissioner of Taxation's annual report and the TES. For 2014-15, the derived estimate ($1332 million) for the refundable component of the scheme was calculated as the total funding estimate for the R&D Tax Incentive scheme, as published in the Commissioner of Taxation's 2014-15 annual report (p. 69), less the TES 2015 estimate for the non-refundable component of the R&D Tax Incentive (Item B78, p. 57).

Estimates of the R&D Tax Incentive, as published in *Trade & Assistance Review 2014-15*, including the derived estimate for the refundable tax offset, are presented in table 4.6. The Commission also published estimates of the R&D Tax Incentive — exemption of refundable tax offset (TES 2015, Item B77, p. 56).

Table 4.6 **Previous R&D Tax Incentive funding, 2012-13 to 2014-15**
$ million (nominal)

| *Program* | *Source* | *2012-13* | *2013-14* | *2014-15* |
|---|---|---|---|---|
| R&D Tax Incentive | | | | |
| – Non-refundable tax offset | *Treasury's Tax Expenditure Statement* | 1 070 | 1 170 | 1 000 |
| – Refundable tax offset | *(Derived estimate)* | 516 | 851 | 1 332 |
| **Total** | *Commissioner of Taxation's annual report* | **1 586** | **2 021** | **2 332** |
| Exemption of refundable tax offset | | -190 | -290 | -380 |

*Source*: Commission estimates based on ATO (various years) and Australian Government (2016b, p. 56, item B77).

For *Trade & Assistance 2015-16*, the Commission was informed by the Department of Industry, Innovation and Science that the Commission's estimate for the R&D Tax Incentive, as published in the Commissioner of Taxation annual report, did not include both the refundable and non-refundable components of the scheme. Rather, it included only the refundable component of the scheme. This was confirmed by the Australian Taxation Office.

The Commission's methodology resulted in the understatement of the level of assistance provided by the R&D Tax Incentive scheme since its inclusion in the estimates in 2013-14. In correcting this error in methodology the Commission has re-estimated the level of budgetary assistance (and hence overall levels of assistance) since 2013-14. The revised estimates for these years as well as the correct estimate for 2015-16 are reported in the 2015-16 *Review*.

The Department suggested that estimates for the R&D Tax Incentive as published in the Australian Government's 2016-17 Science, Research and Innovation Budget Tables represented a more accurate reporting of the budgetary assistance provided under the scheme. The Commission elected to use these estimates in the *Trade & Assistance Review 2015-16*.

The Department's estimates, however, report the R&D Tax Incentive scheme in the year in which the activity (generating the concession) occurs. The Commission (following Treasury's treatment) traditionally has reported the concession in the year in which it is received by the company. This is typically the year after tax returns are completed (the year after the activity creating the concession occurs). Hence, discrepancies between the *Review* and department estimates will arise when a program is growing or contracting.

The Department also informed the Commission that the R&D Tax Incentive — exemption of refundable tax offset was also incorporated into the estimates published in the Science, Research and Innovation Budget Tables. This scheme was also removed from the Commission budgetary assistance estimates for *Trade & Assistance Review 2015-16* (table 4.7).

Table 4.7 **Revised R&D Tax Incentive funding, 2012-13 to 2014-15**

$ million (nominal)

| *Program* | *Source* | *2012-13* | *2013-14* | *2014-15* |
|---|---|---|---|---|
| R&D Tax Incentive | | | | |
| – Non-refundable tax offset | *Science, Research and Innovation Budget Tables* | 1 070 | 1 170 | 1 000 |
| – Refundable tax offset | | 1 449 | 1 403 | 1 866 |
| **Total** | | **2 519** | **2 573** | **2 866** |
| **Difference between TAR 2015-16 and TAR 2014-15 estimates** | | **1 103** | **842** | **904** |

*Source*: Commission estimates based on Australian Government (2016a).

The Department also queried the Commission's allocation of the R&D Tax Incentive scheme to the Commission's ANZSIC–based industry groupings. The Commission intends to review this industry allocation as part of next year's *Review*.

## 4.6 Combining tariff and budgetary assistance estimates — conversion to constant dollar basis

The tariff assistance estimates are initially derived for all years in the series in 2013-14 Input-Output base-year dollars. That is, different tariff levels, or rates, over a number of years are combined with the same 2013-14 ABS input-output data. This approach provides multiple year estimates of GSE and TEM tariff assistance in constant 2013-14 dollars.

In contrast, expenditure under budgetary assistance programs are in current year dollars.

As indicated above, to combine estimates of the value of tariff assistance at reference-year values with estimates of budgetary assistance at current-year values, the estimates of tariff assistance need to be adjusted or scaled from input-output base-year dollars to current-year dollars. The Commission uses ABS Gross Value Added (GVA) data by national accounts industry division to scale the tariff assistance from base–year (2013-14) values to current-year values. The concordance between trade and assistance industry groupings and the national accounts division used in the scaling process is provided in table 4.8.

The ABS updates the GVA data annually. Statistical revisions arising from these updates flow through to affect the current-year dollar value estimate of tariff assistance and, in turn, the effective rates of assistance estimates. Some minor year–to–year variation in the Commission's assistance estimates therefore occurs with revisions in ABS GVA data.

Table 4.7 **Concordance between Trade & Assistance industry group and national accounts**

| *Trade & Assistance industry group (ANZSIC 2006)* | *National accounts industry division (ANZSIC 2006)* |
|---|---|
| Horticulture and fruit growing; Sheep, beef cattle and grain growing; Other crop growing; Dairy cattle farming; Other livestock farming; and Primary production support services | Agriculture |
| Aquaculture and fishing; Forestry and logging | Forestry and fishing |
| Mining | Mining |
| Food, beverages and tobacco | Food, beverage and tobacco products |
| Textile, clothing, footwear and leather | Textile, clothing and other manufacturing |
| Wood and paper products | Wood and paper products |
| Printing, publishing and recorded media | Printing and recorded media |
| Petroleum, coal, chemical and associated products | Petroleum, coal, chemical and rubber products |
| Non-metallic mineral products | Non-metallic mineral products |
| Metal products | Metal products |
| Motor vehicles and parts; Other transport equipment; Machinery and equipment manufacturing; and Furniture and other manufacturing | Machinery and equipment |
| Electricity, gas, water and waste services | Electricity, gas, water and waste services |
| Construction | Construction |
| Wholesale trade | Wholesale trade |
| Retail trade | Retail trade |
| Accommodation and food services | Accommodation and food services |
| Transport, postal and warehousing | Transport, postal and warehousing |
| Information, media and telecommunications | Information media and telecommunications |
| Financial and insurance services | Financial and insurance services |
| Property, professional and administrative services | Rental, hiring and real estate services; Professional, scientific and technical services; Administrative and support services; and Ownership of dwellings |
| Public administration and safety | Public administration and safety |
| Education and training | Education and training |
| Health care and social assistance | Health care and social assistance |
| Other services | Other services |

*Sources*: Commission estimates; ABS (2016).

## 4.7 Impact on the effective rate of combined assistance from changing import, budgetary assistance and input-output data

The impact on effective rates of assistance from sequentially changing import data (to 2013-14), revising budgetary assistance estimates and updating ABS input-output data (to 2013-14) on the Commission's ANZSIC-based industry groupings are presented in table 4.8. Effective rate estimates are presented for 2013-14 and compared to effective rates as published in *Trade & Assistance Review 2014-15* and the revised estimates reported in *Trade & Assistance Review 2015-16*, broken down according to changes in import weights, revisions to budgetary assistance and updates to ABS input-output data.

*Changing Import data*

Changing import data, or revising import weights, to 2013-14 increased effective rates of assistance for the Other transport equipment industry from 0.8 per cent, as reported in *Trade & Assistance Review 2014-15*, to 2 per cent. For the Sheep, beef cattle and grain farming industry, the estimated effective rate of assistance increased from 2.4 per cent to 3.4 per cent.

*Revisions to budgetary assistance estimates*

Revisions to budgetary assistance for *Trade & Assistance Review 2015-16*, including adjustments to the R&D Tax Incentive scheme, had a relatively minor impact on the estimated effective rates of assistance for the Commission's ANZSIC–based industry groupings. The Other crop growing industry group recorded the largest change in effective rates, increasing by 0.5 per cent to 1.8 per cent.[18]

*Updating input-output data*

Updating the ABS input-output data to 2013-14 increased the effective rate of assistance for the Motor vehicles and parts industry from 9.5 per cent to 11 per cent while decreasing effective rates for the Textiles, leather, clothing and footwear industry from 8.6 per cent to 5.4 per cent and for the Printing and recorded media industry from 3.7 per cent to 2.2 per cent.

Overall, the Motor vehicles and parts, Other transport equipment and Textiles, leather, clothing and footwear industries account for some of the largest changes in effective rates of assistance between the 2008-09 and 2013-14 series.

[18] The effective rate of assistance after the change in import weights to 2013-14.

Table 4.8 **Impact of changing imports, budgetary assistance and input-output data on effective rates of assistance, 2013-14**[a]

Per cent

| *Industry* | *TAR 2014-15 (2008-09 Series, 2013-14 estimate)* | *Impact of change in: Import weights* | *Budgetary assistance* | *Input- output data* | *TAR 2015-16 (2013-14 Series, current 2013-14 estimate)* |
|---|---|---|---|---|---|
| **Primary Production**[b] | **2.6** | ***0.2*** | ***0.2*** | ***0.0*** | **3.0** |
| Horticulture and fruit growing | 3.1 | *-0.8* | *0.1* | *0.1* | 2.6 |
| Sheep, beef cattle and grain farming | 2.4 | *1.0* | *0.2* | *0.4* | 4.0 |
| Other crop growing | 1.5 | *-0.2* | *0.5* | *0.0* | 1.7 |
| Dairy cattle farming | 1.6 | *-0.3* | *0.1* | *-0.2* | 1.2 |
| Other livestock farming | 0.8 | *-0.3* | *0.1* | *0.0* | 0.6 |
| Aquaculture and fishing | 1.9 | *-0.2* | *0.3* | *0.9* | 2.9 |
| Forestry and logging | 3.9 | *-1.1* | *0.1* | *-0.5* | 2.4 |
| Primary production support services | 0.4 | *-0.2* | *0.2* | *-0.2* | 0.1 |
| **Mining** | **0.1** | ***0.0*** | ***0.0*** | ***0.0*** | **0.2** |
| **Manufacturing**[b] | **4.2** | ***-0.1*** | ***0.1*** | ***-0.2*** | **3.9** |
| Food, beverages and tobacco | 3.6 | *0.0* | *0.0* | *-0.1* | 3.5 |
| Textile, leather, clothing and footwear | 7.9 | *0.6* | *0.1* | *-3.2* | 5.4 |
| Wood and paper products | 4.8 | *-0.2* | *0.0* | *0.3* | 5.0 |
| Printing and recorded media | 3.6 | *0.1* | *0.1* | *-1.6* | 2.2 |
| Petroleum, coal, chemical and rubber products | 3.2 | *-0.1* | *0.1* | *-0.3* | 2.8 |
| Non-metallic mineral products | 3.1 | *0.4* | *0.1* | *-0.5* | 3.1 |
| Metal and fabricated metal products | 4.7 | *-1.0* | *0.0* | *0.1* | 3.9 |
| Motor vehicles and parts | 8.5 | *0.9* | *0.1* | *1.5* | 11.0 |
| Other transport equipment | 0.8 | *1.1* | *0.1* | *1.4* | 3.5 |
| Machinery and equipment manufacturing | 3.1 | *-0.5* | *0.3* | *-0.1* | 2.8 |
| Furniture and other manufacturing | 4.7 | *0.6* | *0.1* | *-0.6* | 4.7 |

[a] Combined assistance comprises tariff and budgetary assistance. [b] Sectoral estimates include assistance to the sector that has not been allocated to specific industry groupings.

*Source*: Commission estimates.

For the Motor vehicles and parts industry, while revisions to budgetary assistance have a negligible impact, changes in import data account for around 40 per cent of the total change in effective rates while input-output data accounts for the remaining 60 per cent. For the Other transport equipment industry, changes to import data account for around 45 per cent of the total change in the effective rate of assistance, 50 per cent by updating input-output and the remaining 5 per cent by revisions to budgetary measures (such as the re-estimate of the R&D Tax Incentive in 2013-14 from $1.7 billion in *Trade & Assistance Review 2014-15* to $2.6 billion in *Trade & Assistance Review 2015-16*).

For the Textiles, leather, clothing and footwear industry changes in import data account for around 15 per cent of the total change in the effective rate of assistance while updating input-output data accounts for around 85 per cent of the change. For the Textiles, leather, clothing and footwear industry, however, changing import data increases the effective rate while updating input-output data decreases the effective rate. Revisions to budgetary measures between the series have a negligible impact on effective rates of assistance to the Textiles, leather, clothing and footwear industry.

# References


ABS (Australian Bureau of Statistics) 2012, *Australian System of National Accounts: Concepts, Sources and Methods*, Cat. no. 5216.0, Canberra.

—— 2013, *Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (Revision 2.0)*, Cat. no. 1292.0, Canberra.

—— 2016, *Australian System of National Accounts 2015-16*, Cat. no. 5204.0, Canberra.

Asialink Business 2017, *Asialink Business*, https://asialinkbusiness.com.au/ (accessed 19 September 2017).

ATO (Australian Taxation Office) 2015, *Commissioner of Taxation Annual Report 2014-15*, Canberra.

—— 2017, *Research and Development Tax Incentive*, https://www.ato.gov.au/Business/Research-and-development-tax-incentive/ (accessed 18 September 2017).

Austrade 2017, *Tropical Medicine*, https://www.austrade.gov.au/international/invest/opportunities/tropical-medicine/tropical-medicine (accessed 18 September 2017).

Australian Government 2012, *Budget 2012-13*, Budget Measures, Budget Paper no. 2, May.

—— 2014, *Budget 2014-15*, Budget Measures, Budget Paper no. 2, May.

—— 2016a, *Science, Research and Innovation Budget Tables 2016-17*, Industry, Innovation and Science Portfolio, May.

—— 2016b, *Tax Expenditure Statement 2015*, Department of Treasury, Canberra, January.

—— 2017, *Tax Expenditure Statement 2016*, Department of Treasury, Canberra, January.

BC (Beef Central) 2013, *Bindaree Beef Scores Unprecedented $23m Grant for Carbon Project*, https://www.beefcentral.com/processing/bindaree-beef-scores-unprecedented-23m-grant-for-carbon-project/ (accessed 18 September 2017).

Carr, K. (Minister for Innovation, Industry, Science and Research) 2013, *$123 Investment in Toyota Australia's Future*, Media Release, 5 August.

DAWR (Department of Agriculture and Water Resources) 2016, *Annual Report 2015-16*, Canberra, September.

—— 2017a, *Farm Co-operatives and Collaboration Pilot Programme*, http://www.agriculture.gov.au/ag-farm-food/farm-collaboration (accessed 19 September 2017).

—— 2017b, *Managing Farm Risk Programme*, http://www.agriculture.gov.au/ag-farm-food/drought/assistance/mfrp (accessed 19 September 2017).

—— 2017c, *Package assisting small exporters*, http://www.agriculture.gov.au/export/from-australia/package-assisting-small-exporters (accessed 19 September 2017).

DIIS (Department of Industry, Innovation and Science) 2017a, pers. comm., January.

—— 2017b, *Australian Government Innovation and Investment Fund (Tasmania)*, https://www.business.gov.au/assistance/australian-government-innovation-and-investment-fund (accessed 19 September 2017).

—— 2017c, *Automotive Diversification Programme*, https://www.business.gov.au/assistance/automotive-diversification-programme (accessed 18 September 2017).

—— 2017d, *Entrepreneurs' Programme*, https://www.business.gov.au/assistance/entrepreneurs-programme-summary (accessed 19 September 2017).

—— 2017e, *Industry Growth Centres*, https://industry.gov.au/industry/Industry-Growth-Centres/Pages/default.aspx (accessed 18 September 2017).

—— 2017f, *Manufacturing Transition Programme*, https://www.business.gov.au/assistance/manufacturing-transition-programme (accessed 19 September 2017).

—— 2017g, *Melbourne's North Innovation and Investment Fund*, https://www.business.gov.au/assistance/melbournes-north-innovation-and-investment-fund (accessed 19 September 2017).

—— 2017h, *Next Generation Manufacturing Investment Programme*, https://www.business.gov.au/assistance/next-generation-manufacturing-investment-programme (accessed 19 September 2017).

—— 2017i, *Tasmania Jobs and Investment Fund*, https://www.business.gov.au/assistance/tasmanian-jobs-and-investment-fund (accessed 19 September 2017).

Gillard, J. (Prime Minister) 2012, *'The Wolverine' to Film in Australia*, Media Release, 20 April.

—— 2013, *Gillard Government Creates up to 70 New Jobs in Hobart*, Media Release, 17 May.

Gretton, P. 2005, 'Australian Input-Output Tables', *Australian Economic Review*, vol. 38, no. 3, pp. 319–32.

IC (Industry Commission) 1995, *Assistance to Agricultural and Manufacturing Industries*, Information Paper, March.

—— 1996, *State, Territory and Local Government Assistance to Industry*, inquiry Report no. 55, Canberra, October.

PC (Productivity Commission) 2000, *Trade & Assistance Review 1999–2000*, Annual Report Series, Canberra.

—— 2002a, *Trade & Assistance Review 2001-02*, Annual Report Series, Canberra.

—— 2002b, *The Commission's Assistance Measurement System*, Methodological Annex A to the Trade & Assistance Review 2001-02, December.

—— 2002c, *Allocating Budgetary Assistance to Primary Production by 10 ANZSIC-based Industry Groupings*, Methodological Annex B to the Trade & Assistance Review 2001-02, December.

—— 2004, *Rules of Origin under the Australia New Zealand Closer Economic Relations Trade Agreement*, Productivity Commission Research Report, Canberra.

—— 2005, *Assistance to Tourism: Exploratory Estimates*, Productivity Commission Research Paper, Canberra, April.

—— 2011, *Trade & Assistance Review 2009-10*, Annual Report Series, Canberra.

—— 2017, *Trade & Assistance Review 2015-16*, Annual Report Series, Canberra.