# 3 Coverage of assistance estimates, classification and quantification

The key forms of assistance 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; and
* agricultural pricing and marketing arrangements.

## 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 goods within the *Textile, Leather, Clothing and Footwear* (TLCF) industry (until 1 January 2015),[[1]](#footnote-1) some cheeses,[[2]](#footnote-2) and second hand motor vehicles (and luxury car taxes),[[3]](#footnote-3) 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 51.1 per cent in 2011‑12.

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 |
| Zero rates | 36.4 | 48.1 | 46.1 | 51.0 | 51.1 |
| > 0 to < 10 per cent | 32.3 | 37.8 | 41.7 | 38.4 | 46.4 |
| 10 to < 20 per cent | 21.7 | 11.4 | 9.7 | 10.4 | 2.4 |
| > 20 per cent | 9.5 | 2.7 | 2.5 | 0.2 | 0.2 |
| Total | 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 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 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; and
* 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.[[4]](#footnote-4)
* *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 preferential trade agreements depend on various matters, including the extent to which producers in partner countries undercut the price of rival imports in 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.

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| 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. |
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##### 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 (about 5500 items) to the 2008‑09 Input-Output Product Classification (IOPC) level (about 1285 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.)

##### 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 1285 items) level. These estimates are then aggregated to the 112 industry ABS Input-Output Industry Group (IOIG) classification, checked for confidentiality, and returned to the Commission.

The Commission then calculates, at the 112 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 112 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, as published in *Trade & Assistance Review 2011‑12*, (and with funding in the 2011‑12 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; and
* 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; and
* 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’*),[[5]](#footnote-5) which are further distinguished by the type of benefits provided (figure 3.1).

Figure 3.1 Forms of budgetary assistance

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| **Budgetary assistance**  Budgetary outlays   1. industry or sector specific   Tax concessions   1. industry or sector specific   Direct financial   1. bounties, grants, subsidies 2. interest rate subsidies 3. credits, loans 4. loan guarantees, insurance 5. equity injections   Funding to organisations which perform services of benefit to industry  Direct financial   1. exemptions 2. deductions 3. rebates 4. preferential tax rates 5. deferred tax |

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; and
* *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, 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.

#### Activities assisted

Budgetary assistance is often designed to encourage particular activities 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 tax concessions and funding of rural R&D corporations, CSIRO and CRCs;
* general export measures — such as the Export Market Development Grants scheme, import duty drawback, TRADEX and Austrade;
* general 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 measures and the Offshore Banking Unit tax concession;
* sector-wide measures — programs that are specific to a particular sector and designed to facilitate adjustment or provide income support, such as ‘exceptional circumstances’ drought relief payments 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 and General Business Tax Break, the small business capital gains tax concessions, the 25 per cent Entrepreneurs’ Tax Offset and the Small Business Advisory Services Program;
* regional assistance programs — measures intended to promote regional industry such as Regional Partnerships and Tasmanian Freight Equalisation Scheme and various structural adjustment programs with a regional focus; and
* other measures — schemes that do not fall within any of the above categories such as the Venture Capital Limited Partnerships Program, the Pooled Development Funds Program 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 incidence

As well as classifying budgetary assistance by form and activities, 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).[[6]](#footnote-6)

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).

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| 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 users, 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, 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 & paper products* industry, and so on. |
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However, many programs assist multiple industries — for example, income tax averaging provisions. A variety of sources is 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 to industry 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 industries or sectors based on available information.[[7]](#footnote-7) ‘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).

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| 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. |
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### 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; and
* other government department and agency publications and communications.

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 industry. 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 2013, p. 30).

## 3.3 Agricultural pricing and marketing arrangements

The Commission’s estimates of assistance afforded by agricultural pricing and marketing arrangements historically have dominated total measured assistance to the agricultural sector.

From the 1980s, agricultural pricing and marketing arrangements have been progressively discontinued and, with the cessation of the Dairy Structural Adjustment Program in April 2008, all the assistance schemes previously included in the Commission’s estimates have closed.

The current 2008‑09 estimates series (2006‑07 to 2011‑12) includes assistance arrangements for the dairy industry for the years in which the scheme operated. The previous 2004‑05 estimates series (2003‑04 to 2010‑11) also included assistance arrangements for rice and sugar — the arrangements for these industries are discussed in more detail in a previous Methodological Annex (PC 2011).

### Dairy

Prior to 2000‑01, the dairy industry received assistance largely from a combination of State government price and regulatory controls, which maintained high prices for drinking milk, and Commonwealth Market Support Payments for milk used in manufacturing — for processing into products such as butter, cheese, milk powder and ice cream. These arrangements provided dairy farmers with assistance amounting to around $450 million in 1999‑2000.

These arrangements were terminated as part of the deregulation of the dairy industry in July 2000. As part of the deregulation process, the Australian Government introduced new arrangements to provide payments to dairy farmers — the Dairy Industry Adjustment Package (DIAP). These payments, which commenced on 1 July 2000, amounted to around $1.8 billion over the 8 year life of the package.

The largest component of the package was the Dairy Structural Adjustment Program (DSAP) which provided $1.63 billion in equal quarterly instalments to eligible farmers (and ex-farmers). The package was funded by an 11 cents per litre levy on retail sales of drinking milk. The levy was removed in February 2009 after enough funds had been raised to repay loans and borrowings associated with the package. Further details of the adjustment package and milk levy were provided in *Trade & Assistance Review 2001‑02*. The methodology for attributing assistance to the dairy industry from these new arrangements was set out in the Methodological Annex to the 2001‑02 *Review*.

Dairy assistance accounted for between 5 and 18 per cent of total assistance to the primary sector over the period 2003‑04 to 2007‑08. Assistance of $0.2 million was recorded for 2008‑09, the last year of the scheme.

## 3.4 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, tax expenditures and agricultural pricing and marketing arrangements; and
* *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, tax expenditures, and agricultural pricing and marketing arrangements are first classified into one of three categories:

* output assistance;
* input assistance; and
* assistance to value-adding factors.

Output and input assistance (predominately negative) 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, tax expenditures, and agricultural pricing and marketing arrangements. In 2011‑12, over 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, TEM and assistance to value adding factors 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 intervention. For example, tariffs on intermediate inputs penalise user industries by raising prices, while consumption subsidies benefit user industries through 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 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 intervention 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’.[[8]](#footnote-8) 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)[[9]](#footnote-9) 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).
* 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.[[10]](#footnote-10) 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 3.2 Australian Government budgetary assistance measures, 2011‑12a

|  |  |  |
| --- | --- | --- |
| Program | Category | Formb |
| Assistance for upgrade of Simplot Processing Plant | Industry-specific measure | BO |
| Austrade | General export measure | BO |
| Australian Animal Health Laboratory | Industry-specific measure | BO |
| Australian Centre for Renewable Energy | General R&D measure | BO |
| Australian Space Science Program | Industry-specific measure | BO |
| Automotive Industry Structural Adjustment Program | Industry-specific measure | BO |
| Automotive Market Access Program | Industry-specific measure | BO |
| Automotive Supply Chain Development Program | Industry-specific measure | BO |
| Automotive Transformation Scheme | Industry-specific measure | BO |
| Bass Straight Passenger Vehicle Equalisation | Industry-specific measure | BO |
| Brandy preferential excise rate | Industry-specific measure | TE |
| Capital expenditure deduction for mining | Sector-specific measure | TE |
| Carbon Capture and Storage Flagships Program | Industry-specific measure | BO |
| Carbon Farming Futures | Sector-specific measure | BO |
| Carbon Farming Initiative | Sector-specific measure | BO |
| Caring for our country – Landcare | Sector-specific measure | BO |
| Clean Business Australia – Climate Ready Program | General R&D measure | BO |
| Clean Business Australia – Green Building Fund | Other measures | BO |
| Clean Business Australia – Re-tooling for Climate Change | Sector-specific measure | BO |
| Clean Energy Trade and Investment Strategy | General export measure | BO |
| Clean Technology Investment – Food and Foundries Program | Industry-specific measure | BO |
| Clean Technology Investment – General Program | Sector-specific measure | BO |
| Climate Change Adaption Partnerships Program | Rural R&D measure | BO |
| Climate Change Adjustment Program | Sector-specific measure | BO |
| Climate Change and Productivity Research Program | Rural R&D measure | BO |
| Clothing and Household Textile Building Innovative Capability Program | Industry-specific measure | BO |
| Coal Sector Jobs Package | Industry-specific measure | BO |
| COMET Program | General R&D measure | BO |
| Commercial Ready Program | General R&D measure | BO |
| Commercialisation Australia | General R&D measure | BO |
| Community Broadcasting Program | Industry-specific measure | BO |
| Concessional rate of withholding tax | Other measures | TE |
| Cooperative Research Centres | General R&D measure | BO |
| Cotton Research and Development | Rural R&D measure | BO |
| CSIRO | General R&D measure | BO |
| CSL – Commonwealth assistance | Industry-specific measure | BO |
| Dairy Research and Development | Rural R&D measure | BO |
| Drought assistance – professional advice | Sector-specific measure | BO |
| Drought assistance – re-establishment assistance | Sector-specific measure | BO |
| Duty Drawback | General export measure | TE |

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Table 3.2 (continued)

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| Program | Category | Formb |
| EFIC national interest business | General export measure | BO |
| Egg Research and Development | Rural R&D measure | BO |
| Energy Innovation Fund | General R&D measure | BO |
| Energy Security Fund – transitional assistance | Industry-specific measure | BO |
| Enterprise Connect Innovation Centres | Other measures | BO |
| Environmental Stewardship Program | Sector-specific measure | BO |
| Ethanol production subsidy | Industry-specific measure | BO |
| Exceptional Circumstances – interest rate subsidies | Sector-specific measure | BO |
| Exceptional Circumstances – relief payments | Sector-specific measure | BO |
| Exemption of film tax offset payments | Industry-specific measure | TE |
| Exotic Disease Preparedness Program | Industry-specific measure | BO |
| Export Market Development Grants Scheme | General export measure | BO |
| Farm Help | Sector-specific measure | BO |
| Farm Management Deposits Scheme | Sector-specific measure | TE |
| Film industry offsets | Industry-specific measure | TE |
| Film industry tax incentives – 10B & 10BA | Industry-specific measure | TE |
| Fisheries Research and Development | Rural R&D measure | BO |
| Fisheries Resources Research Fund | Rural R&D measure | BO |
| Ford Australia Assistance | Industry-specific measure | BO |
| Forest and Wood Products R&D | Rural R&D measure | BO |
| Grains Research and Development | Rural R&D measure | BO |
| Grape and Wine Research and Development | Rural R&D measure | BO |
| Green Car Innovation Fund | Industry-specific measure | BO |
| High Costs Claims Scheme | Industry-specific measure | BO |
| Horticulture Research and Development | Rural R&D measure | BO |
| ICT centre of excellence | General R&D measure | BO |
| Illawarra Region Innovation and Investment Fund | Other measures | BO |
| Income tax averaging provisions | Sector-specific measure | TE |
| Indigenous Broadcasting Program | Industry-specific measure | BO |
| Infrastructure bonds scheme | General investment measure | TE |
| Innovation Investment Follow-on Fund | General R&D measure | BO |
| Innovation Investment Fund | General R&D measure | BO |
| Interim Income Support | Sector-specific measure | BO |
| Live Animal Exports Business Assistance | Other measures | BO |
| LPG Vehicle Scheme | Industry-specific measure | BO |
| Meat and Livestock Australia Research and Development | Rural R&D measure | BO |
| National Enabling Technologies Strategy | General R&D measure | BO |
| National Energy Efficiency Initiative – Smart Grid, Smart City | Industry-specific measure | BO |
| National Low Emissions Coal Initiative | Industry-specific measure | BO |
| National Urban Water and Desalination Plan | Industry-specific measure | BO |
| National Weeds and Productivity Research Program | Rural R&D measure | BO |

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Table 3.2 (continued)

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| Program | Category | Formb |
| Northern Australia Beef Industry Strategy Indigenous Pastoral Project | Industry-specific measure | BO |
| Offshore banking unit tax concession | Industry-specific measure | TE |
| Payment scheme for Airservices Australia's en route charges | Industry-specific measure | BO |
| Pig Research and Development | Rural R&D measure | BO |
| Pooled development funds | Other measures | TE |
| Premium R&D tax concession | General R&D measure | TE |
| Premium Support Scheme | Industry-specific measure | BO |
| Procurement strategy | Other measures | BO |
| R&D tax concession | General R&D measure | TE |
| R&D tax offset for small companies | General R&D measure | BO |
| R&D tax offset payments – exemption | General R&D measure | TE |
| Regional Equalisation Plan | Industry-specific measure | TE |
| Regional Food Producers' Innovation and Productivity Program | Industry-specific measure | BO |
| Regional headquarters program | General Investment measure | TE |
| Rural Financial Counselling Service | Sector-specific measure | BO |
| Rural Industries Research and Development | Rural R&D measure | BO |
| Screen Australia | Industry-specific measure | BO |
| Small Business – Simplified depreciation rules | Other measures | TE |
| Small Business Advisory Services Program | Other measures | BO |
| Small business CGT 15-year asset exemption | Other measures | TE |
| Small business CGT 50 per cent reduction | Other measures | TE |
| Small business CGT retirement exemption | Other measures | TE |
| Small business CGT rollover deferral | Other measures | TE |
| Small scale mammalian cell production facility | Industry-specific measure | BO |
| Solar Flagships Programs | Industry-specific measure | BO |
| South East South Australia Innovation and Investment Fund | Other measures | BO |
| Steel Transformation Plan | Industry-specific measure | BO |
| Sugar Research and Development | Rural R&D measure | BO |
| Sustainable Rural Water Use and Infrastructure Program | Sector-specific measure | BO |
| Tasmanian Forest Industry Adjustment Package | Industry-specific measure | BO |
| Tasmanian Freight Equalisation Scheme | Other measures | BO |
| Tasmanian Innovation and Investment Fund | Other measures | BO |
| Tax deduction for conserving or conveying water | Sector-specific measure | TE |
| Tax deduction for horticultural plantations | Industry-specific measure | TE |
| Tax deductions for grape vines | Industry-specific measure | TE |
| Taxation assistance for victims of Australian natural disasters | Other measures | TE |
| TCF Corporate Wear Program | Other measures | TE |
| TCF Small Business Program | Industry-specific measure | BO |

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Table 3.2 (continued)

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| Program | Category | Formb |
| TCF Strategic Capability Program | Industry-specific measure | BO |
| TCF Structural Adjustment Scheme | Industry-specific measure | BO |
| Temporary Assistance for Tasmanian Exporters | Other measures | BO |
| The Small and General Business Tax Break | Other measures | TE |
| Tourism Australia | General export measure | BO |
| TQUAL Grants | Other measures | BO |
| TRADEX | General export measure | TE |
| Venture capital limited partnerships | Industry-specific measure | TE |
| Wool Research and Development | Rural R&D measure | BO |
| 25 per cent entrepreneurs’ tax offset | Other measure | BO |

a Programs included in the budgetary assistance estimates published in the *Trade & Assistance Review 2011‑12*. b BO: budgetary outlays, TE: tax expenditures.

*Source*: Commission estimates.

1. Tariffs on passenger motor vehicles (PMV) in the *Motor vehicles and parts* (MVP) industry were reduced from 10 per cent to 5 per cent on 1 January 2010. [↑](#footnote-ref-1)
2. 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. [↑](#footnote-ref-2)
3. 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, attracts 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. [↑](#footnote-ref-3)
4. 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. [↑](#footnote-ref-4)
5. Some industry assistance is in the form of a ‘tax expense’ (such as the film industry offsets and R&D Tax Offset for small companies). 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. [↑](#footnote-ref-5)
6. 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 2002a). [↑](#footnote-ref-6)
7. For *Trade & Assistance Review 2011‑12*, ‘unallocated other’ accounted for 14 per cent of total assistance, while the sector unallocated categories accounted for a further 8 per cent. [↑](#footnote-ref-7)
8. The term non-traded non-material (NTNM) inputs is the technical expression commonly used in methodology papers. [↑](#footnote-ref-8)
9. Electricity, gas and water are classified as ‘traded’ in merchandise trade statistics and therefore the Commission treats them as ‘material’ costs. [↑](#footnote-ref-9)
10. The manufacturing cost structure for the effective rates was based on the manufacturing census (not the input-output tables). The definition of ‘inputs’ and ‘ services’ used in the manufacturing census differed from the definitions/classifications in the input-output tables. [↑](#footnote-ref-10)