
4 Recent changes to the Commission's assistance measurement system

For *Trade & Assistance Review 2001-02*, the Commission has made a number of adjustments to its effective rates model and methodology to update its estimates and improve their comparability across sectors and to streamline their estimation. These modifications include:

- rationalising the classification of assistance to agriculture;
- rebasing the manufacturing and mining estimates to the latest 'input-output' data available from the ABS;
- switching the agriculture estimates to the same ABS input-output data source as manufacturing and mining;
- aligning the definition of value-added attributed to each sector for assistance purposes across sectors; and
- expanding the coverage of Commonwealth budgetary assistance in the estimates.

This section outlines the changes made and their effects on the Commission's assistance estimates.

4.1 Agricultural classifications

In past years, the Commission calculated ERA for agriculture for 25 commodities⁸ (eg market and manufacturing milk), rather than on the basis of activities undertaken by an industry (eg dairy farming), as it does for other sectors.

For *Trade & Assistance Review 2001-02* and following years, the Commission has rationalised its agriculture estimates, by adopting an 'industry grouping' classification. The six agricultural industry groupings are:

- horticulture and fruit growing;

⁸ The 25 commodities are: tobacco, sheep meat, wool, beef, eggs, poultry, pig meat, wheat, barley, oats, maize, sorghum, apples and pears, citrus, deciduous canning fruits, bananas, vegetables, sugar, cotton, dried vine fruit, market milk, manufacturing milk, oilseeds, wine grapes and rice.

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- grain, sheep and beef cattle farming;
 - dairy cattle farming;
 - other crop growing;
 - other livestock farming; and
 - other primary production.⁹

The Commission has reported assistance for the first five of these six industry groupings (as well as at the 25 commodity level) in the past.

The change facilitates the adoption of other changes to the Commission's estimates, such as expanding the coverage of budgetary assistance and benchmarking the estimates to a single ABS input-output data source (see below).

4.2 Input-output data

In the past for its agriculture estimates, the Commission used a combination of ABARE farm survey and ABS agricultural finance survey and commodities data to derive measures of inputs and outputs by commodity. The use of these sources differed among commodities for reasons of data availability. They also have an incomplete coverage of agricultural production (around 85 per cent).

For the manufacturing sector prior to 2000, the Commission used data from the ABS manufacturing census. These data had a number of limitations for assistance estimation, including an incomplete accounting of industry outputs and inputs by product.

In part to overcome the limitation of these sector- and activity-specific data sources, the Commission has opted to benchmark its assistance estimates on ABS input-output data from the Australian National Accounts. For manufacturing, this change took effect for *Trade & Assistance Review 1999-2000* (see PC 2000, appendix B). For *Trade & Assistance Review 2001-02*, the Commission has adopted ABS input-output data for all of its annual assistance estimates. This change facilitates greater comparability between the agriculture, manufacturing and other estimates. It also provides for a consistent data source within the agricultural system, with a broader coverage of agricultural production activities than previously possible.

⁹ The Commission's new industry grouping classification for the primary production sector, of which agriculture is the main part, also comprises the groupings of *fisheries* and *forestry*. The *other primary production* grouping includes *poultry farming* as well as *services to agriculture, hunting and trapping*.

4.3 Cost-structure base years

The calculation of ERA requires data on industry inputs, or ‘cost structures’, to assess the impact of interventions on industries and to determine a ‘materials to output’ ratio.

In the case of manufacturing, the Commission updates its cost-structure data periodically, leading to a number of ‘series’ of estimates. The manufacturing ERA estimates published in *Trade & Assistance Review 1999-2000* and *Trade & Assistance Review 2000-01* were based on input-output cost-structure data for 1994-95. For *Trade & Assistance Review 2001-02*, the Commission has adopted 1996-97 as the base year for the series (although the ABS data have been adjusted to incorporate the Commission’s preferred treatment of margins¹⁰).

In the case of agriculture, there can be significant year-to-year volatility in cost-structures, due to the effects of drought and changes in world commodity prices (although this is less of a problem at the industry grouping level than at the commodity level). In the past, the Commission has used an average cost-structure calculated over a five or ten year period. For *Trade & Assistance Review 2001-02*, the Commission has adopted a cost-structure for agriculture based on the average of four years input-output data: 1992-93, 1993-94, 1994-95 and 1996-97.¹¹

4.4 Delineation of ‘value added’

Non-traded inputs

One issue that arises in determining value added for assistance measurement purposes is the treatment of ‘service’ inputs. Traditionally service inputs have been equated with non-traded inputs (called *non-traded non-material* (NTNM) inputs). In the assistance evaluation work published in *Trade & Assistance Review*, they comprise all domestically-produced service inputs (including ‘overhead expenses’ such as accounting and advertising services) other than electricity, water and gas.¹²

The appropriate treatment of NTNM inputs (and non-traded inputs generally) has been the subject of some debate and different methods have been suggested. One

¹⁰ For this update, the Commission used a modified ABS 1996-7 IO table to address certain data inconsistencies and to incorporate the Commission’s preferred SNA68 treatment of transport margins.

¹¹ The first ABS IO table was prepared for 1962-63. Since the mid-1980s, the ABS has prepared IO tables for 1986-97, 1989-90, 1992-93, 1993-94, 1994-95 and 1996-97.

¹² Electricity, gas and water are classified as traded in merchandise trade statistics.

model — termed after its originator — is the ‘Corden method’. It includes those inputs with the value added of the processing activity, based on the simplifying assumption that such inputs (eg accounting services) are primarily produced by value adding factors (eg the accountants). An alternative model — the ‘Balassa method’ — treats those items as ‘traded’ inputs under the assumption that they are supplied at constant costs, in order to produce estimates of effective rates for the processing activity alone. However, within the constraints of the effective rate model, there is no way to perfectly capture the effects of non-traded inputs or to estimate effective rates for the processing activity alone.

In the past, the Commission has used different approaches in calculating its manufacturing and agriculture estimates. The manufacturing definition included several NTNMI inputs, whereas the agricultural definition excluded such items. Thus, the Commission’s manufacturing definition, while having elements of both methods, most closely resembled the Corden approach. The agricultural definition had been based on the Balassa method. The past treatment of NTNMI inputs in the Commission’s assistance measures is discussed in detail in Commission’s 1995 paper *Assistance to agricultural and manufacturing industries* (IC 1995, pp. 52–54).

To improve the comparability of its estimates across sectors, for *Trade & Assistance Review 2001-02*, the Commission has adopted the Corden-based method, as previously used in its manufacturing series, for all traded goods sectors. (The Commission does not estimate assistance for the services sector using the effective rates framework.) While improving comparability, this change does not overcome all the difficulties involved in classifying and treating non-material inputs in an ERA model. For example, under this approach, business services are treated as ‘non-traded’, even though they are increasingly traded.

Treatment of capital

Another difference between the previous manufacturing and agriculture estimates was the agriculture system’s treatment of capital inputs. As depreciation data are available from the ABARE Farm Survey, the agricultural system traditionally included depreciation as ‘materials’ in deriving a measure of value added net of depreciation. The manufacturing system excluded those items. Thus it adopted a gross measure of value added; that is, a measure inclusive of depreciation. Treating depreciation as materials in the agriculture estimates also allowed inclusion of the assistance arrangements which affect the cost of using capital, such as tariffs on capital items and accelerated depreciation, into effective rates — although this

approach also raised its own problems.¹³ The past treatment of capital inputs in the Commission's assistance measures is discussed in detail in Commission's 1995 paper *Assistance to agricultural and manufacturing industries* (IC 1995, pp. 54–55).

While there are theoretical merits of the approach formerly adopted for the agricultural sector, the measured assistance effects of arrangements which affect the user cost of capital are not very large relative to other factors. Thus, to facilitate the integration of estimates for *Trade & Assistance Review 2001-02*, the Commission aligned its treatment of capital in its agriculture estimates with that used for manufacturing.

4.5 Budgetary assistance

In the past, the budgetary assistance included in the Commission's agriculture estimates was around half of the budgetary assistance to agriculture identified in the Commission's separate estimates of budgetary assistance to industry. The omissions largely reflected difficulties in identifying the incidence of budgetary programs at the 25 agricultural commodity level.

In addition, apart from the effects of tariff concessions (which can be classified as tariff or budgetary assistance), the Commission's most recent series of manufacturing estimates did not include budgetary assistance at all.

Over the past few years, the Commission has developed a methodology to allocate its budgetary assistance estimates to the same industry groupings for which it calculates tariff and other assistance (see section 2.1). Commencing with *Trade & Assistance Review 2001-02*, the Commission has included this assistance in its ERA estimates.

4.6 Effects on estimates

Table 4.1 provides ERA estimates for 1999-2000 for manufacturing and agriculture using the previous and revised approaches. For most industry groupings, the changes have minimal effects on estimated ERA. In the case of the manufacturing estimates, the new series results in slightly higher estimates than the previous 'tariff assistance only' ERA. In the case of agriculture, the changes reduce the sectors'

¹³ While capital equipment (eg tractors) are usually regarded as traded, other capital items, such as physical structures and buildings, are not considered as such. Because of difficulty in separating out these items, the depreciation used in the agricultural system included both kinds of capital inputs.

Table 4.1 ERAs for agriculture and manufacturing, 1999-2000 (per cent)

<i>Industry grouping</i>	<i>Previous system (as published in TAR 2000-01)</i>	<i>New system (as published in TAR 2001-02)^a</i>
Manufacturing		
Food, beverages and tobacco	4.5	4.9
Textiles, clothing, footwear and leather	25.6	27.2
Wood & paper products	5.5	6.1
Printing, publishing & recorded media	0.9	1.0
Petroleum, coal, chemical & associated products	3.9	6.1
Non-metallic mineral products	2.7	3.5
Basic Metal products	3.0	4.6
Fabricated Metal products	4.7	5.8
Motor vehicles & parts	14.9	15.6
Other transport equipment	-0.6	2.9
Other machinery & equipment	2.2	2.4
Other manufacturing	4.7	8.1
Agriculture		
Grain, Sheep and Grain Beef Cattle Farming	1.5	2.0
Dairy Cattle Farming	52.1	30.8
Horticulture and Fruit Farming	3.5	2.1
Other Crop Growing	3.4	2.3
Other Livestock Farming	2.2	1.9

estimated average ERA slightly. Because most agriculture industries (other than dairy) have very low ERA in absolute terms, the changes have very little impact in percentage point terms. The ERA for dairy declines materially on account of significant change in the value-added base. However, in relative terms, the ERA remains several times higher than the sectoral average (although dairy assistance fell in 2000 following deregulation — see section 4.1 of *Trade & Assistance Review 2001-02*).

Adoption of the changes means that the ERA estimates published in *Trade & Assistance Review 2001-02* are not directly comparable with the estimates previously published by the Commission. The Commission has back-cast estimates

using the new approach to 1997-98¹⁴ (see appendix A), to create some overlap between past series and the new series of ERA to facilitate comparison. As the changes made primarily affect the level rather than changes in assistance, the new methodology introduced in *Trade & Assistance Review 2001-02* is not expected to significantly effect estimated trends in assistance over time.

¹⁴ Additional back-casting is precluded by the non-availability of disaggregated budgetary assistance estimates, particularly for agriculture.