

# Trade statistical pivot table User guide



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#### Introduction

# About this guide

The Department of Foreign Affairs and Trade (DFAT) now publishes a range of trade statistical datasets in Microsoft Office Excel Pivot table format. The purpose of this guide is to assist users to understand how to make the most of this trade data while also providing information on how to manipulate data within these pivot tables.

## **Using pivot tables in Microsoft Excel**

Pivot tables are a powerful, easy to use data analysis tool that enables you to reorganise, filter, group and summarise data by choosing, or dragging and dropping variables into and out of a table.

## **Prerequisites**

A working knowledge of Microsoft (MS) Office Excel is required to use the trade statistical pivot tables. The pivot table has been generated in MS Excel 2010 and is also compatible with MS Excel 2007 or later versions. It cannot be used in earlier versions of Excel.

For more information on how to use MS Excel see MS Support.

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# **DFAT's Trade statistical pivot tables**

## Where to find the Trade statistical pivot tables

The trade pivot tables are located on the DFAT website at:

http://dfat.gov.au/about-us/publications/Pages/trade-statistical-pivot-tables.aspx

## Trade statistical pivot tables

DFAT publishes four trade statistical pivot tables, two at the Australia level and two at the State/Territory level:

- Country and commodity pivot table
- Country and TRIEC pivot table
- State country and commodity pivot table
- State country and TRIEC pivot table

These tables provide an alternative output format for information contained in the DFAT trade statistical publications Composition of Trade and Australia's trade by State and Territory.

The 'Country and commodity' pivot table expands on the tables included in Section 7 of the Composition of Trade publication – Australia's major merchandise trading partners' top 20 exports and imports.

In this pivot table, Australia's merchandise exports and imports is based on the United Nations' Standard International Trade Classification revision 4 (SITCr4) at the 3-digit level, for all partner countries and selected partner country groups. Yearly time series data is available from 2005-06 and annual time series data is available from 2006.

The 'Country and TRIEC' pivot table expands on the tables included in Section 4 of the Composition of Trade publication - Australia's merchandise trade by level of processing.

In this pivot table, Australia's merchandise exports and imports is based on DFAT's Trade Import Export Classification (TRIEC) at the 1-, 2-, 3- and 4-digit levels for all partner countries and selected partner country

groups. Export data is also split between total exports and Australian produced exports. Yearly time series data is available from 1989-90 and annual time series data is available from 1990.

The two State pivot tables provide a State/Territory split of the 'State by country and commodity' and 'State by country and TRIEC'. These pivot tables expand on tables included in Australia's trade by State and Territory publication.

The pivot tables should be used in conjunction with the **Explanatory notes** in these publications.

## Caution with using the Australia level and State level pivot tables

Data compiled for the Australia level pivot tables has been adjusted by DFAT from the raw monthly trade data published by the Australian Bureau of Statistics (ABS). These adjustments help resolve a number of underreporting issues impacting on the raw ABS data at the total Australia level. However these adjustments cannot be applied at the State/Territory level. As a result the total Australia level in the State pivot tables will not match the totals in the Australian pivot tables. This also applies to partner country totals. The Australian pivot tables provide a more accurate picture of Australia's trade as this level.

For more information on the adjustments DFAT applies to the raw ABS monthly trade data please refer to the <u>DFAT adjustments document</u> on the DFAT website at: <a href="http://dfat.gov.au/about-us/publications/trade-investment/Pages/dfat-adjustments-to-abs-official-trade-data.aspx">http://dfat.gov.au/about-us/publications/trade-investment/Pages/dfat-adjustments-to-abs-official-trade-data.aspx</a>.

## Confidentiality in ABS trade data

To avoid divulging commercially-sensitive details of individual firms, the ABS restricts release of statistics on certain commodities. Such details are aggregated into a 'dump' item (SITC code 988) or (TRIEC code 3041) in the pivot tables.

To assist users of Australian trade data, the ABS publishes a monthly list of all Australian Harmonized Export Commodity Classification (AHECC) and Harmonized Tariff Item Statistical Code (HTISC) commodities with confidential restrictions in place in the publication *International Merchandise Trade: Confidential Commodities List* (ABS catalogue 5372.0.55.001). The relevant SITC code is also published. This publication is an essential reference guide for users of ABS merchandise statistics to ensure they are interpreting the trade statistics correctly.

DFAT has also written a number of articles on confidentiality in ABS merchandise trade statistics. A number of these articles are updated on a regular basis. The most useful articles include:

- · Confidentiality in Australian merchandise export statistics
- Impact of ABS confidential restrictions on exports of nickel (updated annually)
- Australia's imports of aircraft & parts (updated annually)

The articles are available on the DFAT website at: <a href="http://dfat.gov.au/about-us/publications/Pages/recent-trade-statistical-articles-and-information-papers.aspx">http://dfat.gov.au/about-us/publications/Pages/recent-trade-statistical-articles-and-information-papers.aspx</a>.

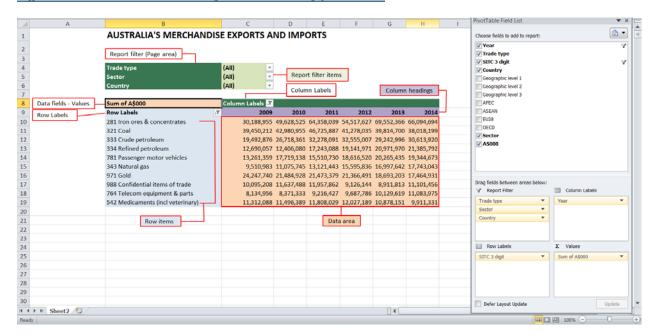
## Structure of the trade statistical pivot table

The following guides use the 'Country and commodity' pivot table as the working example. However all four pivot tables are structured in a similar way and the instructions can be applied equally to the other pivot tables.

The following diagram shows the basic structure of the 'Country and commodity' pivot table. There are a series of fields such as Year, Trade Type, SITC 3-digit, Country, Geographical level 1, 2 & 3, APEC, ASEAN, EU28 & OECD, Sector and A\$'000s to choose from to create a report.

The pivot table will load with the Pivot Table Field List displayed (right-hand side panel in Figure 1 below).

Figure 1: Structure of the Country and commodity pivot table



#### **Fields**

Fields are also known as data items or variables. They are what enable us to specify the data to be displayed in the pivot table.

Fields enable the data to be summarised or filtered.

Within each of these fields are items. For example the items of the field called Trade type are:

- All (= Total trade)
- Total Exports
- Total Imports

Clicking the down arrow at the right of the field name will reveal the item selector, showing the items that make up the field.

There must be at least one data field (values) in the table to provide the numbers for the summary. In the example above it is **Sum of A\$000**.

All the fields can be moved to different areas within the pivot table (i.e. report filters, column labels; row labels; values) by using the mouse to drag and drop via the *PivotTable Field List* (or by directly dragging the items on the pivot table) to give different summaries of the data.

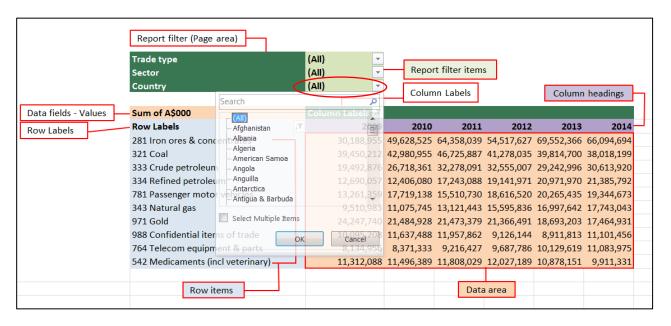
## Report filter (page area)

Dark green and light green highlights in Figure 1

The Report filter (dark green highlight) is used to display the fields used for filtering the data.

The Reporter filter items (light green highlight) is used to select the items needed to create a report

• In the example below the **Country** field has been clicked to reveal the list of countries available. In the **Country** field select either (All) for total all countries or select an individual country. This filter is reflected in the numbers in the data area – see Filtering data for further information.



## Values (data area)

Light orange highlight in Figure 1.

This area contains the numeric summaries determined by the organisation of the fields in the page, row and column fields.

In the example above the data (values) field is A\$000.

The type of summary used in the example is SUM, giving:

Sum of A\$000.

See below for more way to summarise the data.

#### **IMPORTANT**

When using DFAT pivot tables, the data field is A\$000. This is the only field that should be placed in the data (values) area.

#### Row area

Light blue highlight in Figure 1.

The items of fields placed in the row area will be displayed and the summaries created will form the rows of the data area.

In the example above the SITC 3-digit field is in the row area and displays the row items.

For fields in the row area, when the items are revealed, selection boxes appear next to each item enabling selection of specific items.

## Column heading

Purple highlight in Figure 1.

The items of fields placed in the column heading will be displayed and the summaries created will form the columns of the data area.

In the example above the Year field is in the column heading.

The same item selection rules apply to fields in the row area and column heading.

#### Pivot table field list

Not all available fields need to be shown in the Report filter, Row, Column or Values areas. To simplify using the pivot table, only select the fields required to be displayed.

- A full list of all the fields available can be seen in the Pivot Table Field List.
- To open the Pivot Table Field List:
  - Hover over the pivot table with the mouse pointer and right-click to reveal the Pivot Table Sub-Menu
  - Select Show Field List.
- Fields that are currently displayed on the pivot table are shown in bold (see Figure 1).
- Fields that are not displayed are shown in normal font.
- To display a field not already on the pivot table:
  - Use the mouse to select the field from the Pivot Table Field List, drag/drop it to the appropriate area on the pivot table
  - The field will now be shown in bold in the field list.
- To remove a field that is currently displayed on the pivot table:
  - Use the mouse to deselect the field from the Pivot Table Field List OR
    - Drag it out of the pivot table area until you see an X beside the mouse icon and drop the field icon
  - The field will now appear in the Pivot Table field List in normal font.

The Pivot Table Field List can be locked to the sides of the screen. Drag the box to the left or right and when positioned correctly it will snap to the side and expand out. In this position it will remain displayed while a cell in the pivot table is selected.

# Using fields to summarise data

## Moving fields

Fields in any part of the pivot table can be moved to any other part.

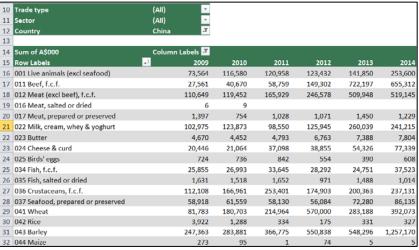
To move a field select the field name with the mouse and drag and drop the field in the new location. The table will then be automatically updated with the revised table layout and data. If a field is placed in the wrong position, simply select, drag and drop to the correct location.

The A\$000 field should only be in the values area.

 The example below shows Trade Type (All), Sector (All) and Country fields (with China only selected) in the Report Filter; SITC 3-digit in the Row Labels; Year in the Column Labels and A\$000 in Values.

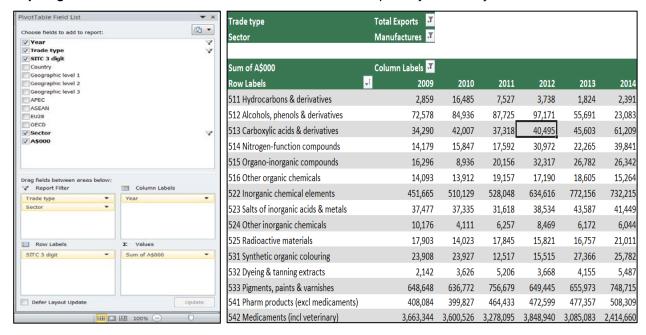
Report generated from above: Australia's total trade (exports plus imports) with China by commodity





 The example below shows Total Exports selected in the Trade type and Manufactures selected in the Sector fields in the Report Filter; SITC 3-digit in the Row Labels; Year in the Column Labels and A\$000 in Value. Country data wasn't required in the pivot table and has been unchecked.

Report generated from above: Australia's total manufactures exports by commodity

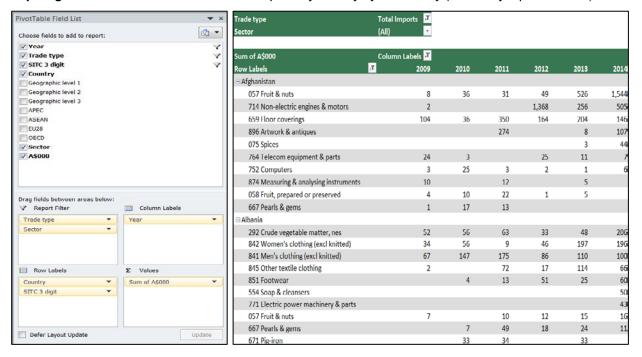


## Stacking fields

Complex tables can be created from the data in the pivot table by stacking the row or column areas.

- · To stack fields, select the fields and drag/drop them into the appropriate row and/or column areas
- You can re-order how they are stacked to suit your requirements (eg you can click and drag the SITC 3 digit field above the Country field in the Row Labels)
- You can stack several fields, but stacking too many fields can make the data difficult to read
- The example below shows the Country and SITC 3-digit fields are stacked in the Row Labels, providing a breakdown of country by commodity (Row) and Year (Column) and A\$000 (Values)

Report generated from above: Australia's imports by country by commodity (ranked by top 10 in 2014)

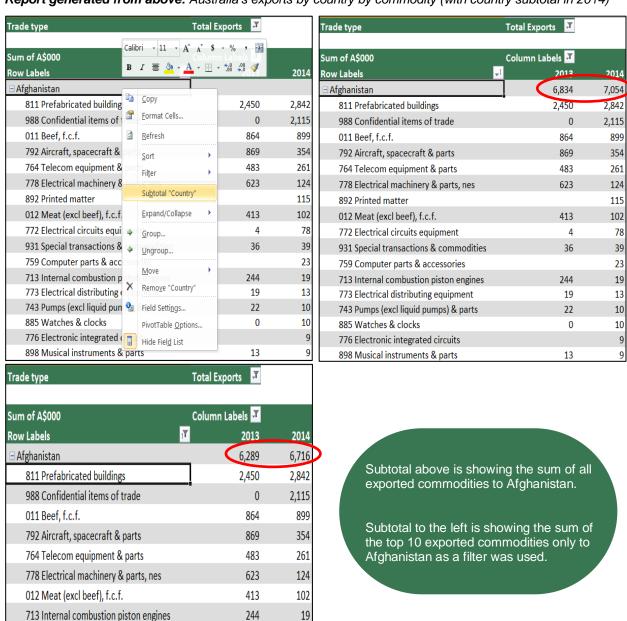


A subtotal can be added for the Country totals by right clicking on one of the country labels in the row labels field and selecting Subtotal "country" from the drop down menu as displayed in the example below.

 The example below shows the Country and SITC 3-digit fields are stacked in the Row Labels, providing a breakdown of country by commodity (Row) and Year (Column) and A\$000 (Values) with a subtotal for the Country.

Please note: If pivot table is ranked by top 10 etc the subtotal for the country will be incorrect as it will only be summing those top 10 commodities and not all the commodities (see 3<sup>rd</sup> screen shot below). Ensure the filter has not been selected (see the Display top countries/commodities section).

Report generated from above: Australia's exports by country by commodity (with country subtotal in 2014)



## Filtering data

695 Hand or machine tools

288 Non-ferrous waste & scrap

Fields appearing in the Page area (Report Filter) can be used to filter the data. For example you may just want to analyse data for one particular country.

139

203

To apply a filter, do the following:

 Make sure the field to be filtered is in the Page area. [If the Country field is not in the Report Filter page area, use the mouse to drag it there.]

- Click the down-arrow at the right of the field box. This will reveal the items of the field.
  - In the Report Filter it is advisable to only select one item for the Trade Type and Sector fields.
     To select multiple items ensure the box is checked next to Select Multiple Items (see examples below).
  - Within the Country field, a variety of combinations can be selected (All) for total all countries (clicked once it will SELECT ALL items, clicked a second time it will DE-SELECT ALL items), an individual country or a selection of countries to get a group total (i.e. selecting the countries in the G20 will produce a G20 total) by checking or unchecking the box next to the country name (see example below).

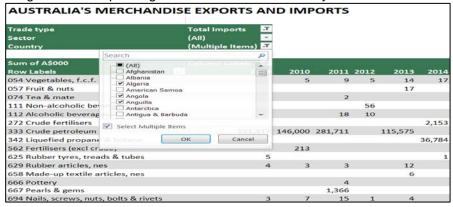
## Trade type:



#### Sector:



**Country:** Select Multiple Items has been checked. Algeria, Angola and Anguilla have been selected – this will give a total imports figure for those 3 countries only.



Click on the drop down arrow and click the item/s to be selected and OK

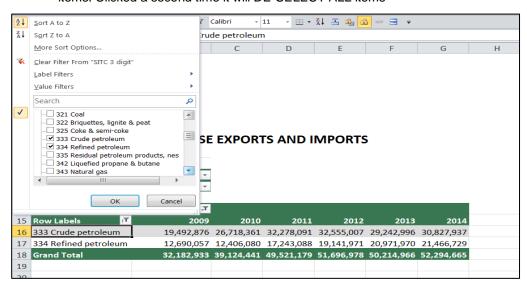
- The data and summaries will now reflect the selection applied
- The field will show the value of the selection applied
- To remove the selected items, click on the drop down arrow 

   and click (All) and OK.

## Selecting data

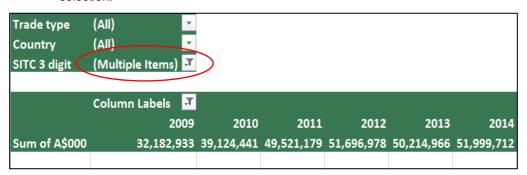
When fields are displayed in the row or column areas you can use the item selector to limit what data is displayed. This is similar to applying a filter whereby you can select more than one item from the field to display.

- The item selector is a good way to see what items are contained within a field, if the field name is ambiguous
- In the example below, the SITC 3-digit field items (Row labels) are shown with just 333 Crude petroleum and 334 Refined petroleum selected and displayed
- When specific selections are made the summaries in the data area and grand totals reflect these selections
- The (Select All) option enables you to over-ride an existing selection. Clicked once it will SELECT ALL
  items. Clicked a second time it will DE-SELECT ALL items



#### **IMPORTANT**

- If you make a selection of items in a field that is in the row or column area, and then MOVE this field to
  the Page area, the selection will be retained and the data will be filtered based on this
- In the example above if the SITC 3-digit field is moved to the Page Area, the selection (333 and 334) will be retained and the data shown as a total of 333 and 334 (see example below)
- The SITC 3-digit page field item will show (Multiple Items)
- To change the selection of items or to include all items, simply select the Item Selector to make a new selection.



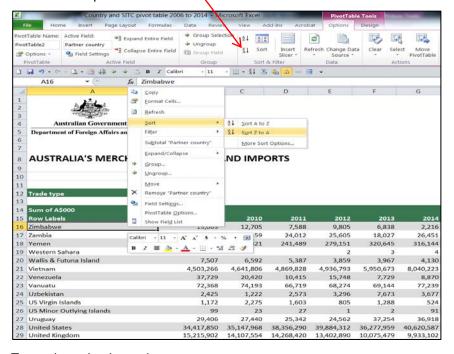
#### Sorting items and data

It is often convenient to sort items in different ways. For example you may want to sort Country alphabetically, or by largest to smallest.

To sort items by name:

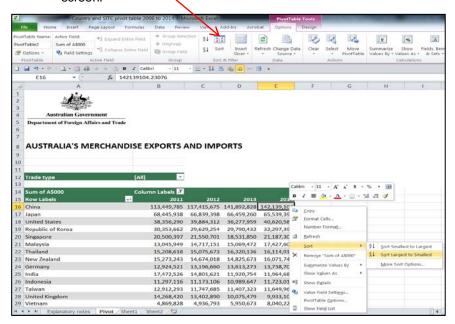
Locate the field to be sorted in the row area

- Place the cursor in any cell in the item list
- Right-click, select Sort. Choose the required option (either Sort A to Z or Sort Z to A)
- OR in the PivotTable Tools tab select the Option Tab. Select ascending or descending in the menu at the top of the screen.



To sort items by data values:

- Locate the field to be sorted in the column area
- Place the cursor in any cell within the column to be sorted
- Right-click, select Sort. Choose the required option (either Sort smallest to largest or Sort largest to smallest)
- OR in the PivotTable Tools tab select the Option Tab. Select the Sort icon in the menu at the top of the screen.



## Display top countries/commodities

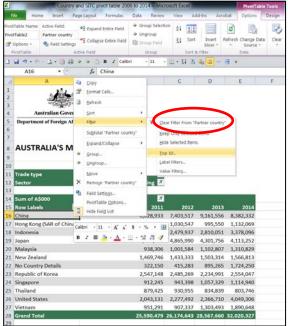
It is often convenient to display just the top trading partners or commodities in the pivot table.

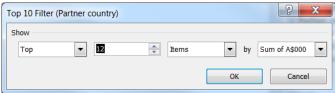
To sort items:

- Locate the field to be sorted in the row area (Country)
- · Click any cell in the country item list
- Right-click, select Filter, select Top 10. In the example below, the number has been set at 12, click OK.

Note: The Grand Total row is only displaying the total of the top 12 countries for Agriculture, forestry & fishing exports

 To remove this filter, select any cell in the country item list, right-click, select Filter then click Clear filter from "Country".





## Copying data from pivot tables

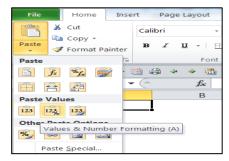
It is often useful to copy data summaries from a pivot table to another excel file for archiving, presentation or further analysis.

Care should be taken when copying data from a pivot table to another spreadsheet, especially if the new spreadsheet is to be subsequently emailed.

Depending on how you copy and paste the data, you can inadvertently copy all the data underlying the pivot table as well, which will increase the size of the excel file many-fold, although you may not be able to see the

To copy data from a pivot table to another excel file:

- Highlight the area you wish to copy, press Ctrl + C on your computer keyboard, navigate to desired cell
  in the destination excel file
- Select the Paste icon ⇒ Paste Values and select Values and number formatting, click OK



The data values will be pasted as formatted values. You will not be able to add or change the output once copied to a different file. The underlying data will not be pasted resulting in a smaller destination file.

# See the result below:

AUSTRALIA'S MERCHANDISE EXPORTS AND IMPORTS					
Trade type	Total Exports				
A\$'000	Column Labels				
Row Labels	2012	2013	2014		
Argentina	273,225	181,298	136,364		
Belgium	1,668,896	1,248,247	1,118,520		
Brazil	991,221	743,128	1,078,833		
Brunei	35,556	47,611	42,632		
Canada	1,644,772	1,381,760	1,233,178		
Chile	427,096	360,619	267,401		
China	72,973,320	94,654,920	90,061,381		
Fiji	298,088	304,306	321,834		
France	1,076,861	1,248,316	1,141,014		
Germany	1,988,830	1,932,613	1,712,150		
Greece	24,551	10,943	12,747		
Hong Kong (SAR of China)	2,595,300	2,614,256	2,876,926		

## **Further information**

Classifications used for DFAT pivot tables:

- <u>United Nations SITCr4</u> (Standard International Trade Classification revision 4)
- DFAT TRIEC (Trade Import and Export Classification)

Confidential commodities list - ABS catalogue <u>5372.0.55.001</u>

Article on DFAT adjustments to ABS official trade data

# Other useful DFAT trade products

- Publications
- Recent trade statistical article and information papers
- Trade time series data
- Interactive <u>Trade at a Glance</u>
- Trade and economic fact sheets
- Statistical consultancy services