Ch 8 PIVOT TABLES­

What is a pivot table?

It’s a feature embedded in most spreadsheet programs – notably MS Excel and Google sheets – which enables you to choose which variables (columns) to group together in order to summarise their contents. The name “pivot” refers to the notion of swiveling a table around your chosen point.

A pivot table takes the original data, but doesn’t edit it. Instead it makes it possible for you to reshape it to meet your needs without having to do any copying or pasting of the data. Think of it as a kind of lens – you can focus on details, but you don’t alter the data themselves.

Beware – when you first meet pivot tables and start to appreciate their power you may be tempted to pivot just about every datasheet you come across. But it’s a bit like that saying “to someone with a hammer, everything looks like a nail”. You can’t, for example, pivot a pivot table – that is, you can’t summarise something which is already a summary. (Well, you can – but you can’t learn anything meaningful by doing this!)

How can you tell that something has already been summarised/pivoted? It’s important to be able to see the difference between raw data and summary data. For example, if you can only see entries which are totals of something else then the chances are that you are looking at someone else’s pivot table. Raw data will have the original entries, and, importantly, could usefully be pivoted.

For example – which of these tables show raw data, and which are the summaries/pivots?

Graphical user interface, application

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Table

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A picture containing text, receipt

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Table

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That’s right – the last two tables show raw data. Even without the names, the 3rd table still contains only raw details – whereas the first two contain summaries.

When you open a table that you have downloaded and you see something like this –

Graphical user interface, table

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Ask yourself – even if I could pivot it, what would the result look like? Put another way – what questions could I ask it? That’s right – someone else, in this case the Office of National Statistics, has already summarised the original data for you. Just about the only thing your pivot of this table could tell you would be the grand totals for each row and column – which you can work out from the table itself.

Making a pivot table

A quick reminder of how to make a pivot table. Slightly annoyingly, Excel and Googlesheets do the same thing in slightly different ways, so here they are both –

Excel

From your main data worksheet, click on Insert, and then choose Pivot Table – the icon on the far left near the top of the screen. (NB – don’t be tempted by “Pivot Chart” in the middle of the same menu: it will take you on a rather confusing route to the same place!)

You should see a little dialogue box as below – make sure the cells detailed in “Table/Range” are the whole table, not a part of it. You cannot edit this box by hand: if the entry is incorrect, you have to cancel and return to your datasheet, and start again. Make sure you only highlight one cell in the data you intend to pivot.

Table

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When you click OK you should see a new worksheet which looks like this –

Graphical user interface, application, table, Excel

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The key to remaining sane, and knowing at all times what variables you have put where is the PIvot Table Fields selector:

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To summarise all payments to political parties (“entities”) we drag the “Regulated Entity Name” entry in the PivotTable Fields chooser to Rows. And “Value” into the Values box:

Graphical user interface, application

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Then to sort the new Sum of Value column into descending order, right click on any one of the totals in that column to bring up a little menu containing the option to “sort highest to lowest”.

Remember – summary totals like this are clickable – double clicking on a total in a pivot table will ask the program to make a new sheet made up of all the numbers which make up that total – along with the other information associated with those payments.

To go back over the basics of pivot tables with a demo, and an opportunity to watch short video demonstrations of the various techniques, click [here](https://www.dropbox.com/s/z3rb1elh0hio310/donations2019_2020_Exercise.xlsx?dl=0)

To make a Pivot Table in Googlesheets

From your main data worksheet, click on Data, and then choose Pivot Table – about 2/3 of the way down the menu which appears.

Graphical user interface, application, table, Excel

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You should see a little dialogue box as below – make sure the cells detailed in “Table/Range” are the whole table, not a part of it. You cannot edit this box by hand: if the entry is incorrect, you have to cancel and return to your datasheet, and start again. Make sure you only highlight one cell in the data you intend to pivot.

Graphical user interface, application

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When you click OK you should see a new worksheet which looks like this –

Graphical user interface, application

Description automatically generated

The key to remaining sane, and knowing at all times what variables you have put where is the PIvot Table Editor

Graphical user interface, application

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To summarise all payments to political parties (“entities”) click the Add button next to Rows in the Pivot Table Editor (right hand side of screen) and select “Regulated Entity Name”. Next to the Values box, we click on the Add button and select “Value”.

Graphical user interface, application, table

Description automatically generated

You should see a screen like this. To sort the results in descending order we need to go back to the Pivot Table Editor and change “Order”, in the box called RegulatedEntityName to Descending.

Graphical user interface, application

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“Sort by” needs to be changed to “SUM of Value” :

Graphical user interface, application

Description automatically generated

Remember – summary totals like this are clickable – double clicking on a total in a pivot table will ask the program to make a new sheet made up of all the numbers which make up that total – along with the other information associated with those payments.

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