

Sum Product

NEWSLETTER #11 - October 2013

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Are you getting the most out of Excel?

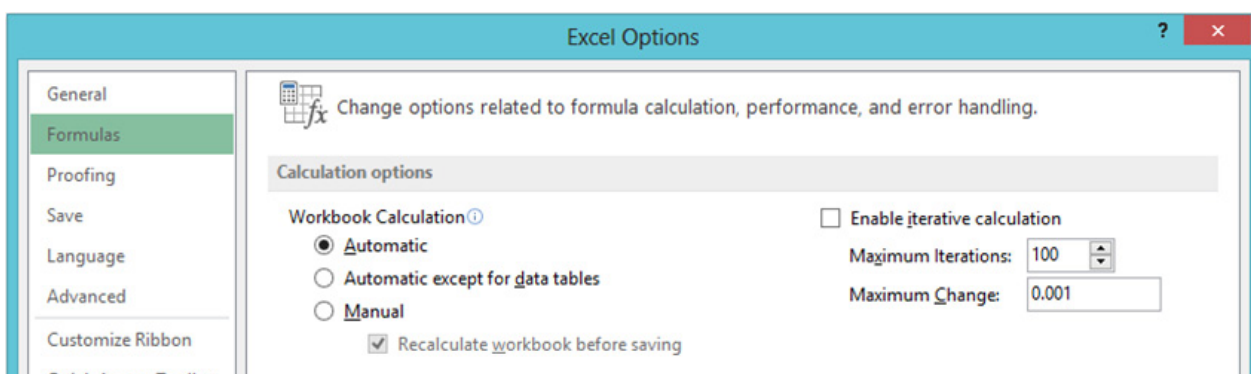
This month's newsletter suggests one or two settings that will help your Excel excel. Although we use Excel 2013 screenshots throughout, rest assured, these tips and tricks should work in all versions. I hope you find them useful!

Liam Bastick, Managing Director, SumProduct



Optimising Calculation Settings

Using the keystrokes ALT + T + O activates Excel Options. Selecting 'Formulas' (assuming you are in Excel 2007 or later) brings up the 'Calculation options' section:



We strongly recommend you always have Workbook Calculation set to 'Automatic': you may not be the next person to open your file and when was the last time you checked all calculations were switched on in an Excel file?

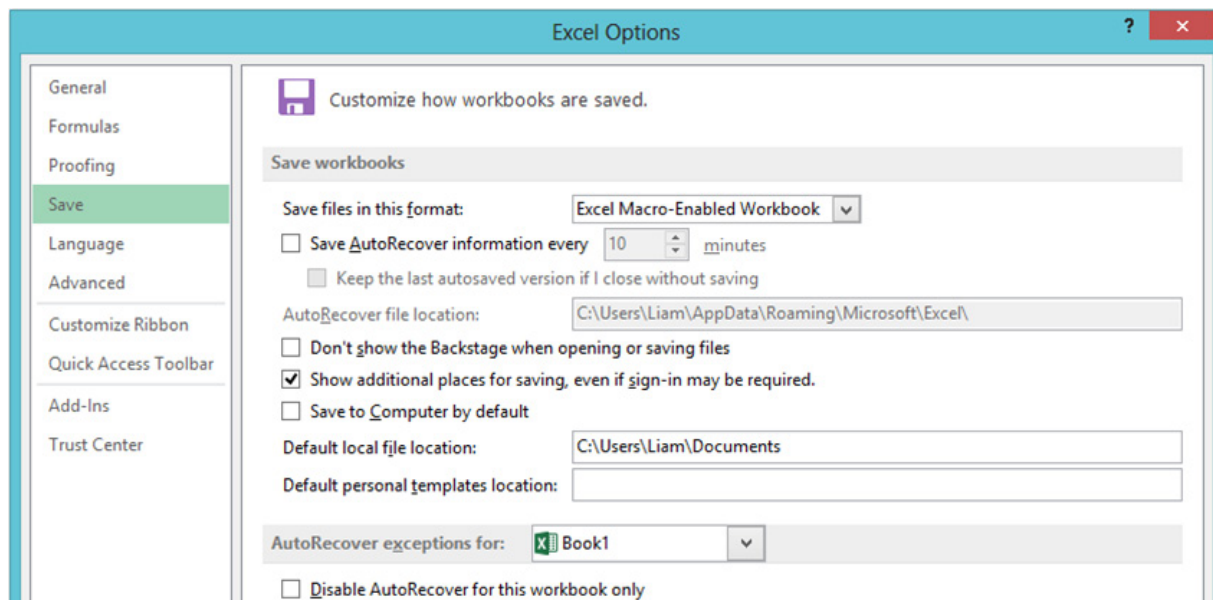
More advanced users may suggest 'Automatic except for data tables' is a safer option, preventing Excel being tied up for long periods inadvertently due to the prevalence of Data Tables in a workbook. However, we disagree. We firmly believe any critical settings

are explicitly shown. If you don't want Data Tables to calculate every time you hit 'ENTER' try our calculation switch tip: please see <http://www.sumproduct.com/thought/data-tables> for further details.

Switching off 'Enable iterative calculations' is also recommended. This feature often disguises the fact that a workbook may have unintentional circular references (i.e. calculations that ultimately refer to themselves). Otherwise, this can cause crashing, file corruption, incorrect values and erroneous zero values amongst other nasties.

AutoSaving Ideas

Again in Excel Options, this time in 'Save', we have some suggestions here too:



You never know when you might require VBA functionality in a spreadsheet, so saving files by default as an 'Excel Macro-Enabled Workbook' may be preferable to 'Excel Workbook', where macros are disallowed. It also prevents someone else from accidentally auto-saving and inadvertently killing automation, etc.

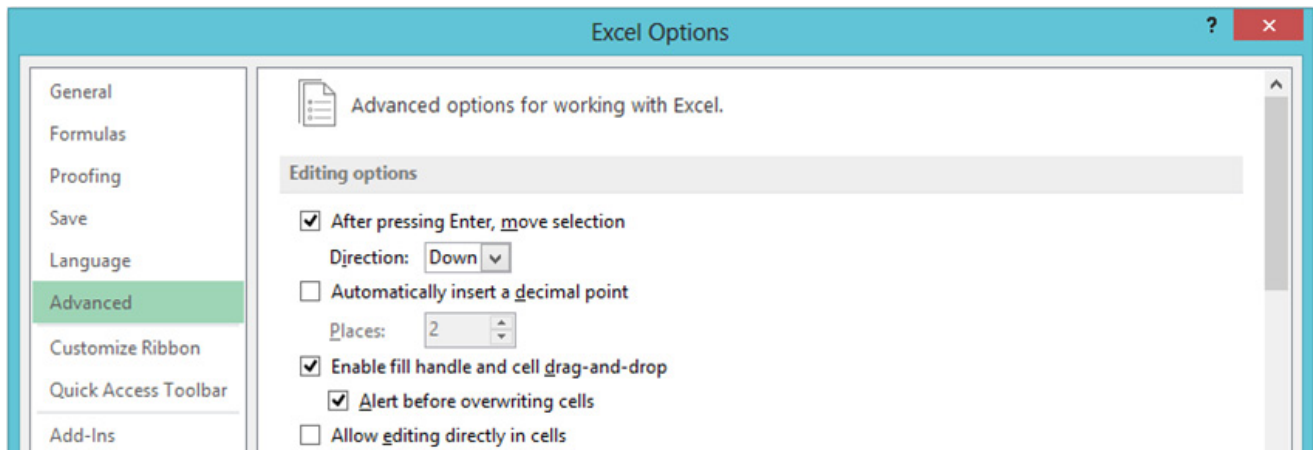
For more advanced users, you might also wish to disable 'Save AutoRecover information...'. This feature is highly useful for the inexperienced as it will save your file on a regular basis, but for those

that like to experiment, sometimes it's useful to try something and when it doesn't work close without saving. AutoRecover might well scupper this idea.

WARNING: This should only be switched off for those that trust themselves to save every five or ten minutes. If you are unsure, don't do it!!

Navigation Tips

Another section to explore in 'Excel Options' is the 'Advanced' section. One little-known tip is to uncheck 'Allow editing directly in cells':



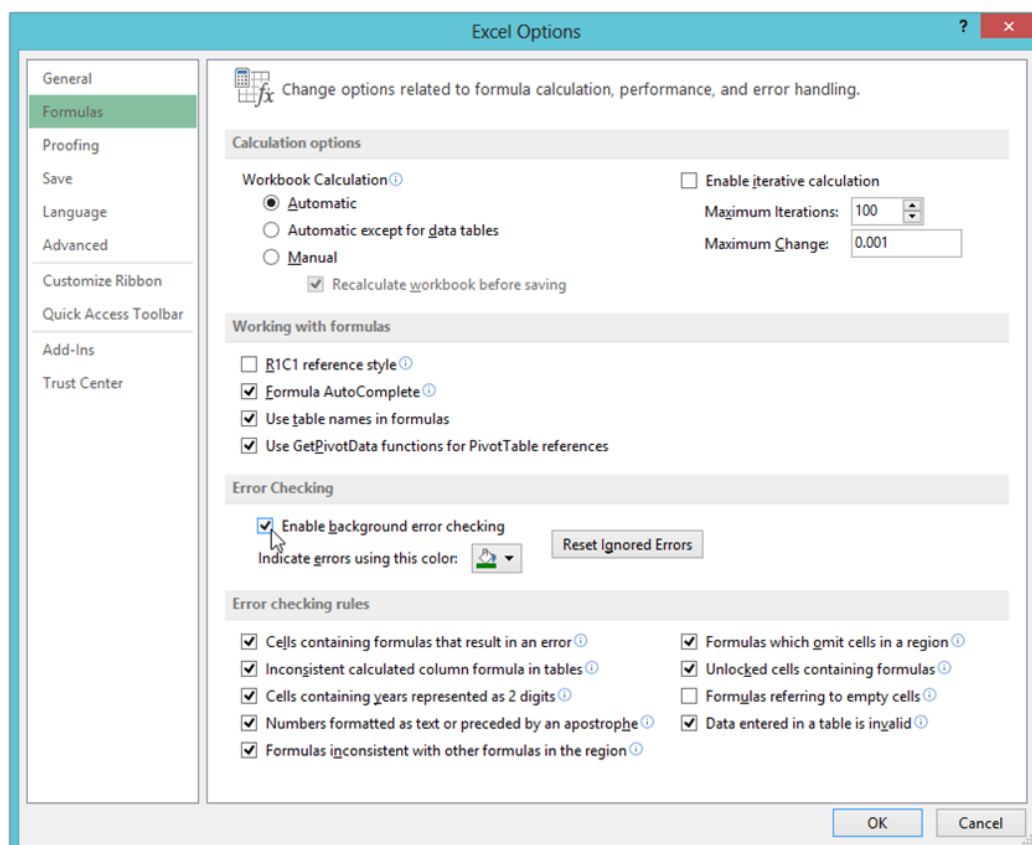
With this functionality disabled, double-clicking on a cell takes the user to the precedent cell (and F5 + ENTER will return you again afterwards). CTRL + [and CTRL +] are alternative keyboard shortcuts for tracing precedents and dependents also.

Use Excel's Background Error Checking

Strictly speaking, this should be instigated during the model development phase as it can assist the modeller throughout construction. To enable this functionality, go to Excel's Options (ALT + T + O) and in the 'Formulas' section, ensure that the 'Enable background

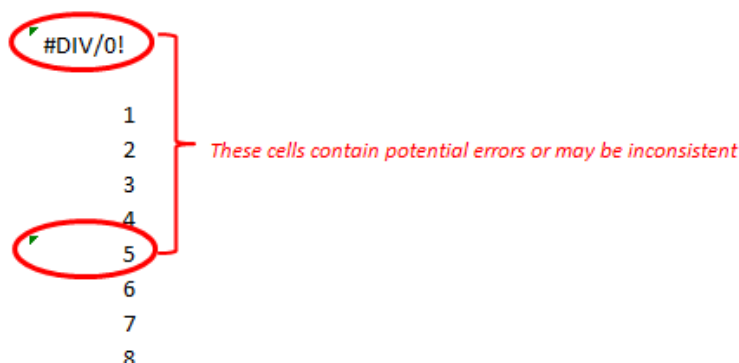
error checking' tick box is checked. Once activated, the user can select which error checking rules should be catered for by inspecting the 'Error checking rules' section directly beneath this check box.

Excel's Background Error Checking



This functionality does not prevent errors from occurring, but potentially erroneous cells are highlighted by Excel in a fashion similar to cells that include comments, viz.

Example of Background Error Checking at Work



The problem with this approach is it is easy to miss this annotation, but it is better than nothing.

Checking Excel's Security Settings

Because macros may execute all sorts of nasty code, Excel's default setting is set so that macros will not run automatically. To ensure macros will work, you will first need to check / amend Excel's security settings, viz.

Excel 2003 and earlier

Call up the 'Options' dialog box (Tools -> Options or ALT + T + O)

- Select the 'Security' tab
- In the 'Macro security' section, click on the 'Macro Security...' button
- Ideally, select / confirm the setting as 'Medium'. This means you can choose whether or not to run macros
- Excel may have to be closed and re-opened for these changes to be adopted

Excel 2007 and later

- Click on the Office Button
- Click on 'Excel Options' (ALT + T + O is the equivalent of these first two steps)
- Select 'Trust Center' from the left hand columnar list
- In the 'Microsoft Office Excel Trust Center' section, click on the 'Trust Center Settings...' button
- Select 'Macro Settings' from the left hand columnar list (if the 'Developer' tab is displayed on the Ribbon, ALT + L + AS will get you to this point immediately)
- In the 'Macro Settings' section, select 'Enable all macros' (note this is a slightly more dangerous option than its Excel 2003 counterpart)

Complex Formula of the Month

Sponsored by Specsavers, this month's formula in our ad hoc series is a real beauty:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Electron microscopes are available from all good electron microscope retailers, priced US\$45,000 upwards.

Let's back up. From high school, most of us may vaguely recall – perhaps in our nightmares – that

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

is the solution to the quadratic equation

$$ax^2 + bx + c = 0$$

Well, the above horror formulae provide the solutions to the quartic equation

$$ax^4 + bx^3 + cx^2 + dx + e = 0$$

So what on earth is this doing in a SumProduct newsletter?

Well, you can actually use this formulae to calculate internal rates of return for a five period cashflow, where each period is equal in length. This is quite useful for investment appraisal, project finance, valuations, etc. Many of you reading this may work in these areas. We bet none of you have ever computed IRR in this manner!

In fact, we often require solving equations of higher order than four, e.g. calculating the internal rate of return for a ten year period and so on.

We were going to set a competition this month to derive the general solution for a quintic equation:

$$ax^5 + bx^4 + cx^3 + dx^2 + ex + f = 0$$

However, Galois [1832] proved that there are no general solutions calculable for equations of power 5 and above. So if you think you have one, we suggest you write a book on it. It won't sell though.

Nonetheless, we solve these problems all of the time using Excel – which we take for granted – using user-friendly tools such as Goal Seek and Solver. These iterative tools use sophisticated approaches to try and

“guess” the solutions without the need for a PhD in Pure Mathematics. So, spare a thought for these humble tools next time you need to “fix” an output: the task might be far harder than you might imagine.

For more information on Goal Seek and Solver, please see <http://www.sumproduct.com/thought/desperately-seeking-solver>.

Reader's Question

My F4 (repeat last action) has somehow toggled off. How do I reactivate it?

In the VBA Editor (ALT + F11), enter the following statement in the 'Immediate' pane. It restores the F4 shortcut key to its default meaning:

Application.OnKey "{F4}"

Modified syntax can be applied for similar issues with other function keys (It won't help Apple users though!).

No Souped-Up Excel For You!

Further to our recent article regarding Power Pivot being available via Excel 2013 Standalone, some readers have contacted us to say that they have been unable to access this powerful Business Intelligence tool having purchased said software. Apparently, there is a technical hitch presently – but it is definitely coming.



Microsoft acknowledges the issue and cites the following press release:

“Microsoft has found an issue with the August release of Excel 2013. This issue will cause the Power View and Power Pivot add-ins to not be able to load in Excel Retail Standalone 32- and 64-bit. This issue will be addressed as part of a future update”.

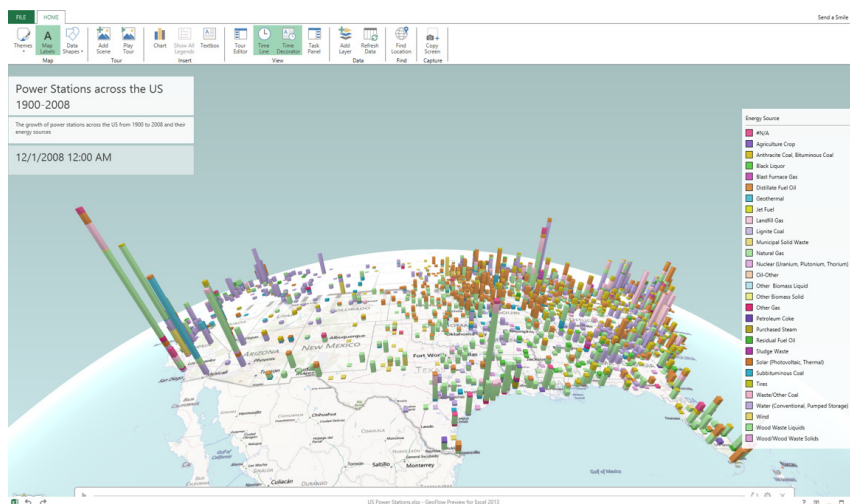
Whilst it could be a tad more specific, it is hoped that Power Pivot will be available via this medium very, very shortly. We'll keep you posted.

Power Maps: September Update

We've talked about Power Maps ("The Artist Formerly Known As Geo Flow") before (e.g. see <http://www.sumproduct.com/news/geo-with-the-flow>), but we thought we'd pass on the latest update. Microsoft has just announced that Power Map Preview, its final "V1 Preview", has just been posted on their Download Center (<http://office.microsoft.com/en-us/excel/power-bi-download-add-in-FX104087144.aspx>).

This latest release contains new features such Region Chart type, Flat Map and the ability to create videos from your Power Map tours. Further, this preview supports English, Japanese, Spanish and Arabic versions of Office Pro Plus 2013 (this version of Excel is a requirement).

For those who like to play, the Power Map Preview for Excel 2013 may be downloaded from <http://www.microsoft.com/en-us/download/details.aspx?id=38395>.



Key Strokes

Each newsletter, we'd like to introduce you to several useful keystrokes you may or may not be aware of. This month we look at saving and closing:

Keystroke	What it does
CTRL + S	Save file
ALT + F + A	Save As
CTRL + W	Close current workbook
ALT + F4	Close Excel

There are over 540 keyboard shortcuts in Excel. For a comprehensive list, please download our Excel file at <http://www.sumproduct.com/thought/keyboard-shortcuts>.

Upcoming SumProduct training courses

Kuala Lumpur 2nd - 3rd Oct: Valuation Modelling (Extended)

Melbourne 10th - 11th Oct: Power of Power Pivot

South Africa 21st - 25th Oct: Structured Mining Project Finance Models

Sydney 28th - 29th Oct: Power of Power Pivot

Brisbane 30th - 31st Oct: Power of PowerPivot

Hong Kong 26th - 29th Nov: Strategic Planning, Budgeting and Forecasting

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- Key driver analysis
- Model reviews / audits for internal and external purposes
- M&A work
- Model scoping
- Project finance
- Real options analysis
- Refinancing / restructuring
- Strategic modelling
- Valuations
- Working capital management

If you require modelling assistance of any kind, please do not hesitate to contact us at contact@sumproduct.com.

Please forward

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