Some of the Excel wizards in the [QPP Yahoo Group](#), namely **investor952**, devised an ingenious way to get around that cell protection by using a second, unprotected spreadsheet and doing a bit of linking.

You can find links to the original posts on this topic by going to the Yahoo Groups link above. What follows is my own (hopefully simplified) version of the process. I used to be a technical writer in a former life so hopefully this is somewhat concise and useful. In a nutshell here is how you use the solver add-in with QPP:

1. **Make a backup copy of QPP before you do any of this!**

2. Open both your copy of QPP and a second, blank spreadsheet in Excel.

3. In the blank XLS, you are going to create a simple two column collection of data. In the first column create a list of all the ticker symbols you want in your portfolio (up to the maximum of 20 allowed by QPP). In the second column enter a corresponding starting weight for the asset. I usually format this column as a single decimal point percentage (as QPP has) and I usually just start with 5% for each of the 20 assets (these will be changed when you run solver to optimize them.

4. Save this XLS as whatever name you wish.

5. Now go into QPP and find the page where you actually enter the ticker symbols. Here we are going to "link" these cells to the ticker symbol cells you just created in the new XLS. You do this by simply going to the cell and typing = and then switching to the new XLS and selecting the corresponding cell you wish to link to. If you then select the cell again in QPP you will see that it has something similar to the following in the cell contents: ='[QPP Solver.xls]Sheet1′!$B2 (here QPP solver.xls is the name of the spreadsheet I created). Do this for all 20 cells.

6. Scroll down to the next page of QPP where it allows you to enter percentage weights for the assets and perform the exact same actions as you did above, only this time you are linking the weighting cells in QPP to the weighting cells in your new XLS.

7. Now you will need to switch back to your new XLS and create cells for any variables that you are going to want to optimize on. I personally use Average Return, Standard Deviation, Portfolio Beta, and Diversification Metric. Then use the cells out beside those to create a link back to this same data in QPP. It will look something like this: ='[Quantext Portfolio Planner v4.0.xls]Portfolio Report'!$E$93. Be careful when you do this, QPP has a few data areas that are centered across a range of cells, make sure your = statement only includes the first cell in the range. In the example above $E$93 is good. Something like $E$93:$G$93 would cause errors.

8. You should now be ready to run solver.

The goal is to change the portfolio weights of your assets to optimize some variable that is calculated by QPP. This could be average return, standard deviation, a ratio between the two, the diversification metric, or perhaps something else creative you come up with. This is not intended to be a tutorial on how to use solver but here are some tips on constraints and setup.

- The target cell should be whatever variable you want to optimize.

- The area "By Changing Cells" should be a selection of the asset weighting cells in your new XLS.

- In the constraints you are definitely going to want to set the total of the weights to = 1 (i.e. 100%). You are probably going to want to set a minimum value of 0 for each weight (otherwise it will create negative values!). You may want to set a maximum value if you don't want more than say 10% in any one asset. You will also want to create a constraint that has a maximum of 1 for any cell you did not already create a maximum for.

- **VERY IMPORTANT:** If you don't use all 20 asset spaces in your portfolio then remove any constraints related to those cells AND those cells from the "By Changing" field in Solver, otherwise you will end up with some crazy stuff.

- This process is **VERY SLOW**. We are talking minutes, not seconds. If your solver times-out you can play with the Max Time (I set mine to 600 seconds) under the options button. BE PATIENT!

I am not here to debate the merits of "to optimize or not to optimize". That is another topic for another day. I, for one, would never use any sort of optimal weighting down to two decimal points or something similar and just blindly buy assets that were weighted by some QPP optimization. I apply a certain level of common sense and my own investment experience to my portfolio weightings. I just find that being able to perform these types of optimizations is a really valuable learning experience. If you play with it enough you see some very interesting dynamics among various assets and classes.

Once again, a hat tip to investor952 for this information. I did not come up with this solution, I am simply documenting it. Please comment below if you would like to share more tips or experiences with this.

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