



COMPASS Spreadsheet

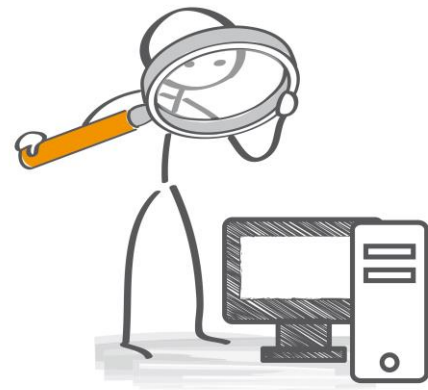
USER MANUAL

Companion Spreadsheet for the book:

THE VALUATION ANALYST

Research in Extracting Adjustment Rates

by David A. Braun, MAI, SRA, AI-GRS.



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<http://www.AVTtools.com>

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This spreadsheet requires that MS Excel be loaded on your computer. This is because it is heavily automated by programming procedures written in Visual Basic Applications (VBA). These macros will not run in free spreadsheet programs. This may not run on a cloud based processor (no testing has been done).

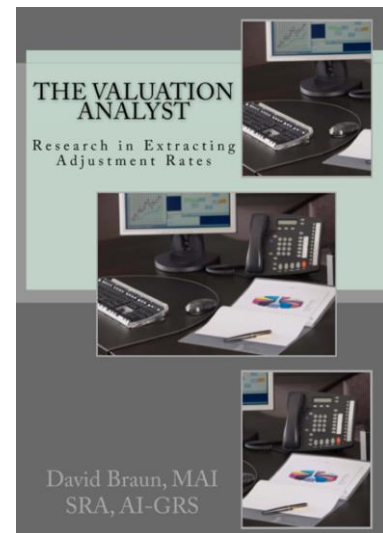


INTRODUCTION

The purpose of the book, THE VALUATION ANALYST Research in Extracting Adjustment Rates and the COMPASS SPREADSHEET are to provide a framework of information regarding analysis that will improve the way appraisers perform the Direct Comparison Approach (DCA). This user manual assumes you have read THE VALUATION ANALYST (TVA) and refers to specific topics discussed in that book.

The accepted and current method for performing the DCA is the comparison analysis grid. This has been the staple in residential appraising as far back as the 1930's. Fundamentally, this method is still appropriate. However, without reservation, I can say that there has been very little change in how appraisers perform the mechanics of this approach. The bulk of appraisers today extract and apply their adjustments exactly how appraisers did over 80 years ago. The few improvements are in word processing, computerized arithmetic calculations, and computerized report building. About a decade ago, I designed and programmed a regression application in Excel (The Regression Plus). I later had it professionally programmed as a stand-alone application that did not run in Excel. I still sell this product and feel it is the best regression alternative for appraisers. However, regression analysis is not well understood by appraisers resulting in misuse of the outputs. The Compass is designed to maximize the appraiser's efficiency and effectiveness, by providing the computer power to the extraction methods that they currently understand and use. Appraisers must understand the concepts presented in THE VALUATION ANALYST Research in Extracting Adjustment Rates; in order to comprehend what their due diligence is regarding appraisals. It was written so that the typical appraiser, with limited knowledge of statistics, could relate to it. There has never been a greater need for appraisers to improve their turn-time, and provide more reliable opinions than today.

The COMPASS SPREADSHEET was created as a means for appraisers to apply multiple mathematical based analysis methods, which produce meaningful evidence that users, appraisers, reviewers and underwriters require. You might think of the Compass as, going "Back to the Future", as it primarily relies on traditional analysis techniques, but in a very automated way. For example, the traditional comparison grid is a type of market model (market modeling is covered in Chapter 2 of TVA). Because the comparison grid is a market model, the outputs (indicated price) can be validated to a degree by residual



analysis (this is also covered in Chapter 2 of TVA). This is a mathematical process that is appropriate for properties located in property market Divisions I and II (see Chapter 7 for a discussion of property market divisions in TVA). However, mathematical based analysis techniques may not be appropriate for properties that are a part of Division III markets. TVA book discusses additional extraction techniques when working in property market Categories “D”, “E” and “F”. Indirect methodologies apply to all three property Divisions, but are typically the only choice for Division III markets. This spreadsheet relies on a quantitative sensitivity analysis, residual analyses, and cumulative paired sales. These concepts are discussed throughout TVA book.

The Compass Spreadsheet is a free application until December of 2017. Your purchase of the companion book; “THE VALUATION ANALYST Research in Extracting Adjustment Rates” will help fund this spreadsheet. It can be purchased from my website www.AVTtools.com, Create Space, or Amazon.

If you have training, experience, intelligence, and good judgement then you have probably been making sound adjustments all along. The compass is designed to work with your current process by bringing a barrage of brute mathematical analyses to bear on the problem. The outputs of these analyses will help clarify your reasoning. Most appraisers find that the Compass can help them develop and support more than half of the adjustment rates in a given appraisal. It is your partner- REQUIRING your input, and you need its advanced analyses and reporting capabilities.

This is a beta version. I want to hear from those of you who think you will want to continue to use this application. If enough are interested, I will begin the process of programming the Compass into a stand-alone format and make it more compatible with your workflow. Please send comments and recommendations to david@AVTtools.com.

LET'S GET STARTED!

A QUICK OVERVIEW

The Compass Spreadsheet can be used to extract one or more adjustment rates to be applied to a separate adjustment grid, or it can produce a completed ready to-go adjustment grid. The adjustment grid is laid out in a fashion similar, but not exactly as presented on the Uniform Residential Appraisal Report (URAR). It is appropriate for non-lender work. The "Control Panel" follows:

Full screen Toggle

Lock	ALL	Analysis	Coefficient	Reliability (Dev. Mag.)	Paired sales (Avg. Dev. #)
		Site	\$48,000	52.3% 13.1%	\$23,000 \$46,624 42
		GLA ag	\$90	4.9% 4.8%	N/A
X		B-Fin	\$0	N/A	N/A
X		B-Unfin	\$0	N/A	N/A
X		Garage	\$0	N/A	N/A
		Pool	\$20,000	100.0% 3.0%	N/A
		Location	\$10,000	34.3% 2.4%	\$3,000 \$10,893 33
		DSS	4%	85.6% 2.9%	N/A
		Condition	-\$8,000	20.5% 2.4%	-\$1,000 \$12,180 35
		Quality	-\$3,000	34.3% 0.8%	N/A
X		Actual Age	\$0	N/A	N/A
X		Bedrooms	\$0	N/A	N/A
X		Baths	\$0	N/A	N/A

Import Data

Comps Load Data Subject

Manual Adjustments


Set Rules

Mimik®

Use My Inputs

Select Comps

Built the Report



C
O
M
P
A
S
S

3.1% | 1.7% | 6.1%

\$374,864

\$358,000 to \$391,000

Residuals

Subject's Price Opinion

Most Probable Range of Value

3.1% | 1.7% | 6.1%

\$374,864

[Previous Analysis](#)

[Previous Subject's Price Opinion](#)

Residual Breakdown

There are several components built-in to the Compass that help you:

1. Import the data from a spreadsheet that was populated by an MLS or some other data source.
2. Load the data and subject information onto the sales grid.
3. Allow you to manually make the adjustments that can't be automatically extracted.
4. Easily control the chart axis scales.
5. Run the Mimik®, which is an algorithm that automatically estimates many of the adjustment rates based on rules input by the appraiser.
6. Override any adjustment rates that were automatically generated.
7. Use automated tools to select the best three comparable sales.
8. Automatically build the reports. Either a report just to explain the adjustment rates developed, or include an adjustment grid.

Keep in mind that there is no regression analysis involved in extracting the adjustment rates. Step 5 (Run the Mimik®) does utilize some artificial intelligence in a “black box” environment. However, it is used to begin the adjustment process because using sensitivity analysis, residual analyses, and paired sales analysis to extract the adjustment rate of a property component will not work until all of the “other” features are adjusted correctly.

Frankly, the only thing the Compass does that appraisers may not be familiar with is residual analyses. This concept is thoroughly covered in TVA book. The Compass may not be understood properly without access to the book, THE VALUATION ANALYST Research in Extracting Adjustment Rates (TVA). This book is a must have for any appraiser, reviewer, or enforcement agency as it clarifies the appraiser's due diligence when extracting adjustment rates.

Please start by watching the series of videos provided which demonstrate the Compass Spreadsheet.

You have been provided some sample data that you can cut and paste onto the “data” sheet in the Compass. Be sure to enter the subject data as well. After you run the Mimik® be sure to perform at least two iterations of the (Sensitivity, Residual, and Paired Sales) analyses for each of the appropriate property features.

Set up the template: Make a copy of the original template and keep it somewhere that is backed up. You may wish to 1) map the database fields, 2) modify the “Rules” sheet, and modify the “Defaults” sheet in the template. Some users have built a series of templates with different settings.

The **Import Data button** will move the comparable data that you exported from your MLS into the Compass spreadsheet. You need not scrub the data for this step and there is no limit to the number of fields that you bring over. You will want to be sure your best comparables are near the top as it will only bring over the first 20 records. Remember that the Compass requires exactly 10 comparables to be used. The spreadsheet file (or .csv file) that contains your data must be open for the Compass to see it. The data will be imported into the Compass on the “RawData” sheet.

The **Map Fields button** found on the “RawData” sheet allows you to identify the field names that came in with your data, to the Compass. You should do this in the actual template so it will only have to be done one time. You may wish to set up a temple for each MLS or database that you use. When you click the button a moveable box appears that contain the fields that the compass requires. Click on one of the fields in the box and drag the box until you see the corresponding field at the top of the sheet. Click on the cell that contains the name. In a few seconds you will see that name appear in the box. Continue this until all of the corresponding fields have been identified. If you are in the template, then save it. To remove a name, select the field in the box and then select an empty cell on the sheet.

The **Transfer Data button** found on the “RawData” sheet then moves the data that the Compass needs to the “Data” sheet. There must be at least 10 comparable sales on this sheet with the appropriate data.

If you choose, you can skip the import feature and field mapping by simply entering the data by hand into the “Data” sheet.

Scrubbing the data means that all of the fields except “Address” and “City” must be in numeric format. The date field should be in date format. “Condition” and “Quality” can be on a 1-6 scale as per the UAD, or some other scale; but, the higher number scale means the property is losing value (so these adjustments will always be a negative number). “Pool” can be a 0 for “no” and a 1 for “yes”. You could also rate the pool facilities on a larger scale to take the size and quality of the facilities into consideration. If you use a larger scale, then you want to rate the facilities in blocks that have about the same value.

I typically rate the location on a scale of 1-3, but you could use most any scale. I rate the site on scale of 1-3 that considers all aspects of the site (shape, size, topography, drainage, view, etc.). If you decide to use lot size, you must use an “acre” scale (square feet will not run). Be sure that the settings in the “Rules” sheet are appropriate.

The bedroom, bathroom, and actual age adjustments are not calculated by the Compass, except for in the cumulative paired sales analysis. This is because my experience shows that the number of bedrooms and bathrooms have more to do with comparable selection than adjustments. The year built is typically already covered in condition, functional utility, and design and appeal.

There can be no blanks in the data, except the “Extra” fields should be empty. Once the data is entered you can run a correlation analysis by clicking on the **Run button** on the “Data” sheet. You can modify the sensitivity level.

Next click **Load Data** on the “Data” sheet to move the data onto the adjustment grids. This will bring you to the Control Panel (Sheet “CP”).

Click the **Subject button** to load the subject data. The subject data is not necessary if you are only attempting to get some idea of the appropriate adjustment rates.

The **Manual Adjustments button** allows you to enter information onto the sales grid that was not included in the original data. It is alright to skip this, however, if there are adjustments that should be made, the Compass will work better if they are considered.

The **Set Rules button** allows you to set the scale of the charts, and help the Mimik® do a better job of making the preliminary adjustments. The ranges should be slightly wider than the appraiser’s preliminary ranges (it is better to be too wide, than too narrow). You may set any of the cells that are not color-coded. You can change the defaults by opening the actual template, then un-hiding the sheet named “Defaults”. Then on the “Rules” sheet select the **Reset to Defaults button** and then click on the **Apply these Settings button**. Hide the Defaults sheet and save the Template.

Next you will need to enter preliminary adjustment rates. You can do this making your best guesses, or by running the Mimik® algorithm. I suggest you run the Mimik® which takes 2-3 minutes to run and then modify any rates you don't agree with. If you enter your own rates, then you will need to click on the **Use MY Inputs button** to apply the rates to the adjustment grid.

Next move over to the "Analyses" buttons for the individual property features. The features marked in Green color coding are features that are all the same for the comparables and subject property. The "X" in the "Locked" column instructs the Compass not to include their charts in the report. Click each of the appropriate property features one at a time. A red color-coding means that the subject has a feature that is unique from the comparables. For example, the subject might have a pool, but none of the comparables do. The appraiser will still need to make an adjustment for this, but it will not be extracted by the Compass.

Here is how it works: The best adjustment rate for a single property feature partially depends on the adjustment rates applied to the other features. The Compass does not know when the other features are adjusted properly. So, if you disagree with the Compasses' adjustment rate, simply override it by replacing it with a better one. If your rate is within the range of outputs generated by the Compass, move on to the next property feature. If your rate is not within the ranges output by Compass, then include an "X" in the "Locked" column and continue with the other features. Come back to the feature whose adjustment you did not agree with on the next pass (or iteration). It will likely output different adjustment rates because some of the other adjustments have changed. At this point one of three things will happen:

Case 1: The appraiser agrees with the rate the Compass selected.

Case 2: The appraiser disagrees with the rate the Compass selected. The appraiser changes the rate, but it is still within the range of outputs.

Case 3: The appraiser disagrees with the rate the Compass selected. The appraiser changes the rate, and the new rate is outside of the range of outputs. In this case, an "X" must be entered in the "Lock" field.

Refer to Chapter 7 of the TVA for a list and discussion of alternative adjustment extraction methods if Case 3 results. An iteration is when each feature is adjusted one time. Two to four iterations should be made. Do not make too many iterations as "model drift" may occur. Model drift is a phenomenon where the Compass gets lost in

the numbers and begins to build a model that simply isn't reasonable. Perhaps you can think of some appraisers who do the same thing (LOL).

The Compass brings a barrage of concentrated mathematical analyses to bear on the problem. However, it has no long-term memory of what adjustment rates worked in previous analyses in this market. It does not know what other extraction techniques might be telling the appraiser (for example cost based or survey methods). Also, it does not have access to information on the economic forces that have recently influenced the pricing mechanism (See TVA Chapter 2). The appraiser makes the call on the appropriateness of the Compass's outputs based on this other information. For example, the Compass works on the assumption of straight-line relationships which may be inappropriate in certain situations. There may be a high degree collinearity in the data set. The appraiser must evaluate the appropriateness of any extraction technique. The appraiser brings a lot of knowledge to the table, and what may seem like random actions are really actions with very specific intentions. In Chapter 5 of TVA book, it demonstrates that there is no correct single point adjustment rate. There is always a range of "correct" or reasonable rates. This flexibility allows the appraiser to use a variety of adjustment rates to obtain a reasonable market model fit. Categorically speaking, the process of analysis outlined by the Compass is a combination of mathematical analyses and "expert" input. This inter-active approach to analysis can be extremely effective in predicting property prices in property markets where there are a sufficient number of comparables.

Next click the **Select the Comps button**. Note the "Weight of Importance near the top. You can modify these. You could also modify these in the template so it will only have to be done one time. Click the **Sort button**. It moves the best comps to the top and marks them with an "X". To modify this selection simply uncheck the ones you don't want and check the ones that you do want. The report builder will move the first three checked sales to the adjustment grid.

Finally, from the "CP" sheet you can click the **Build the Report button**. This will create two items: 1) a report displaying the evidence that you relied on in selecting the adjustment rates, and 2) the adjustment grid. The appraiser will have to explain the logic and reasoning supporting any adjustment rates that were not generated via the Compass spreadsheet. You will have finish completing the grid if you use it. You can print these items out or convert to a .pdf file format.

This manual is not yet complete and requires that you view the associated videos to successfully operate it.