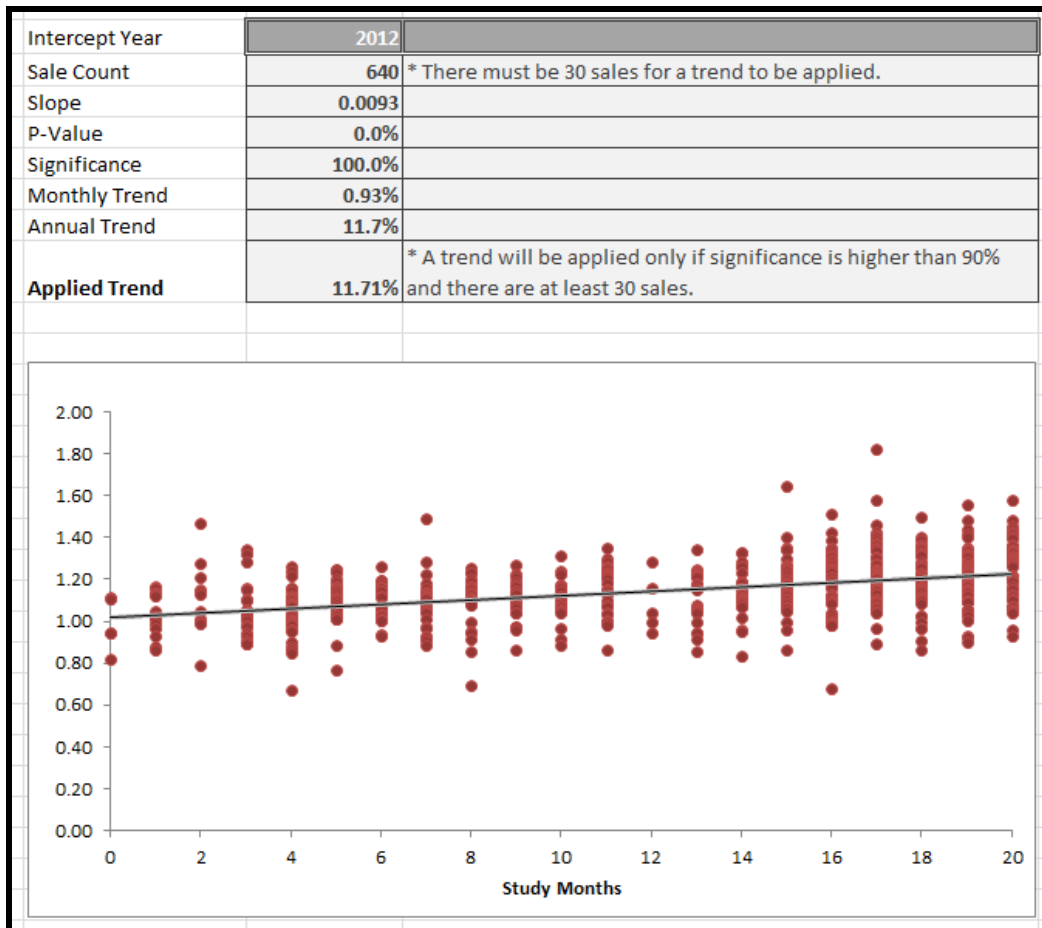


## Utilizing the MAAO Sales Ratio Tool for Estimating a Market Condition Adjustment

This procedure document is intended to assist the assessor in determining market conditions adjustments with the MAAO Sales Ratio Tool. Starting with the 1/2/2014 assessment the Tcalc methodology was integrated into this tool, this also includes changes to the Tcalc methodology using a normal log. This document refers to the MAAO Sales Ratio tool version labeled "Ratio Study Template & Tcalc 2014a" which was made available after December 18, 2013. Any previous or altered versions may not produce the same results.

### Acquire time trend results for a study utilizing the official DOR created Tcalc tool:

The first recommended step is to ensure that your data produces the same results in each program. Numerous tests were successfully performed to ensure that the MAAO tool exactly replicated the DOR Tcalc methodology. However, for users who are unfamiliar with the process in the MAAO tool they will want to perform a test run to ensure that user error is not an issue. This document will not go over performing the tests in Tcalc, but you will want to begin by acquiring the following data from an individual Tcalc analysis:



**Prepare the "Sale Data" sheet for data import:**

1. Open the "Ratio Study Template & Tcalc 2014a" tool and navigate to the "Sale Data" sheet.

34	01-11650-03-200	100	694631	\$176,000	\$187,234	\$197,000
35	01-11650-03-210	100	973030	\$170,600	\$181,489	\$191,000
36	01-11650-04-040	100	976293	\$167,900	\$178,617	\$188,000
37	01-11650-04-050	100	969829	\$181,200	\$192,766	\$202,900
38	01-11650-04-060	100	694648	\$152,600	\$162,340	\$170,800
39	01-11651-01-030	100	694671	\$207,400	\$220,638	\$232,200
40	01-11651-02-050	100	975773	\$181,500	\$193,085	\$203,200
41	01-11651-03-020	100	694678	\$220,600	\$234,681	\$247,000
42	01-11651-03-020	100	694679	\$220,600	\$234,681	\$247,000
43	01-11651-04-140	100	694701	\$177,800	\$189,149	\$199,100

Navigation tabs: Sale Query, **Sale Data**, Notes, Stats Only, Data, Trend Estimates

2. Delete the data existing in this sheet by highlighting all of columns and rows below row one and pressing the delete key.

ORDER NO.	PARCEL #	PROPERTY TYPE	CRV #	2012 EMV	2011 EMV	2010 EMV	SALE DATE	ADJ SALE PRICE	EXTRA FEATURES	QUALITY	ACRES	ARCH STYLE	ACT YEAR BUILT	EFF YE
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

**Warning about the information on this sheet!!!**  
 The Blue fields are the searchable fields. Make sure you delete the sample sales before entering your own.  
 You can delete any of the data on this page AND you can change the name of the fields (to some degree) if desired but **DO NOT** delete any rows or columns. You **CANNOT** have duplicate field names. You should **NOT** change the column location

3. For the 1/2/2014 assessment analysis it is recommended that you change the labels of columns E, F, and G to the following assesment years:

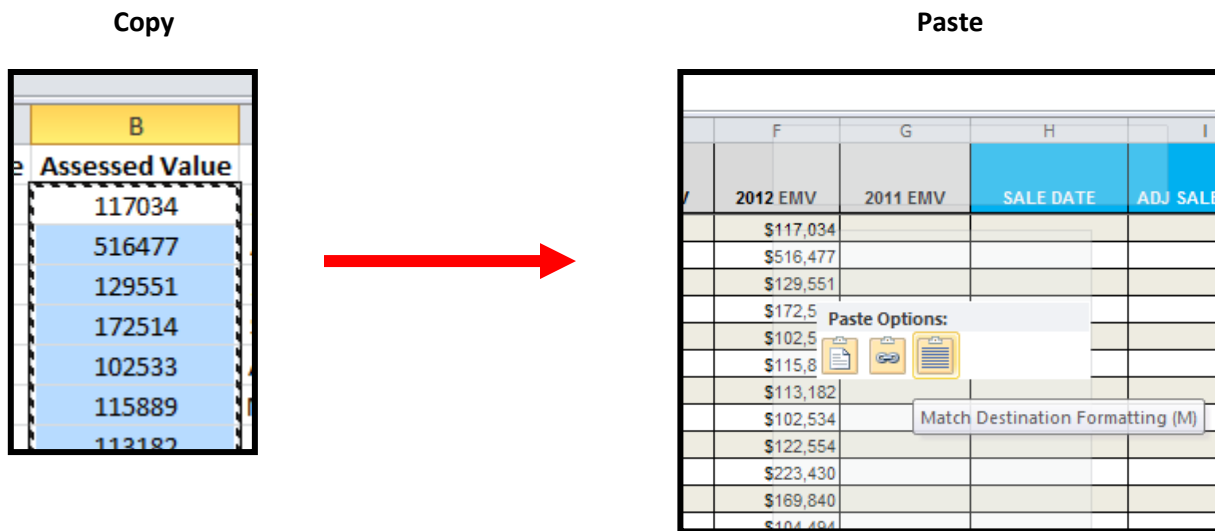
E	F	G
2014 Prelim EMV	2013 EMV	2012 EMV
\$161,200	\$125,400	\$135,100

**Import your sale data:**

For this step you will also want to consider what type of analysis you intend to perform later on. In this example I am simply importing the required data for an analysis of a predetermined property type and area. However, it is recommended that you import your entire county sale data set including any fields that you may wish to stratify by for additional analysis.

The basics would allow you to stratify by already determined DOR sale ratio studies (Property type code, jurisdiction, etc.). Importing additional data may allow you to determine if the existing stratification makes sense. For example, if you also imported building style you may be able to further analyze a city's residential study by attached vs. detached housing in an effort to determine if those markets should be segregated when determining time adjustments.

1. Copy and paste your data into each field. Be sure to paste matching destination format:




2. Repeat this step for each data field you are importing. To run a time adjustment for the 1/2/2014 assessment you will need all qualified sales between 1/2/2012 and 9/30/2013. For each sale you will need the following at a minimum:
  - a. 1/2/2012 assessed value
  - b. Adjusted sale price
  - c. Sale date
  - d. Parcel number

Once you have imported each column of data you can return to the "Sale Query" sheet

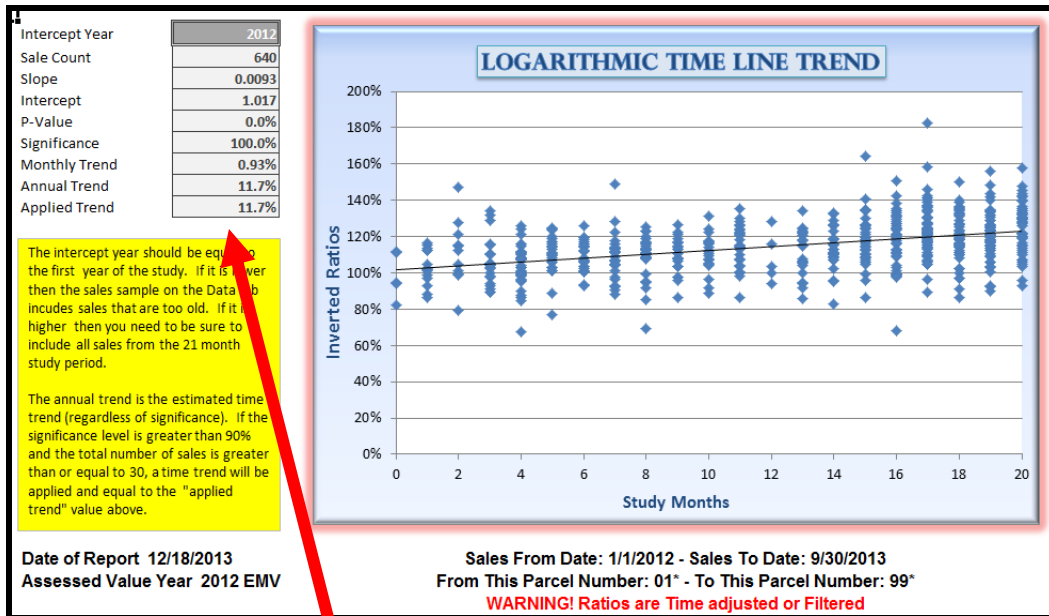
**Analyze imported data for a time adjustment:**

1. Set criteria for sale extraction. This criteria used in this example is the bare minimum to run a tcalc on data that has already been narrowed to sales for one residential study prior to importing the data. If you brought in data from more than one study you will have to filter by additional fields such as PT and jurisdiction:

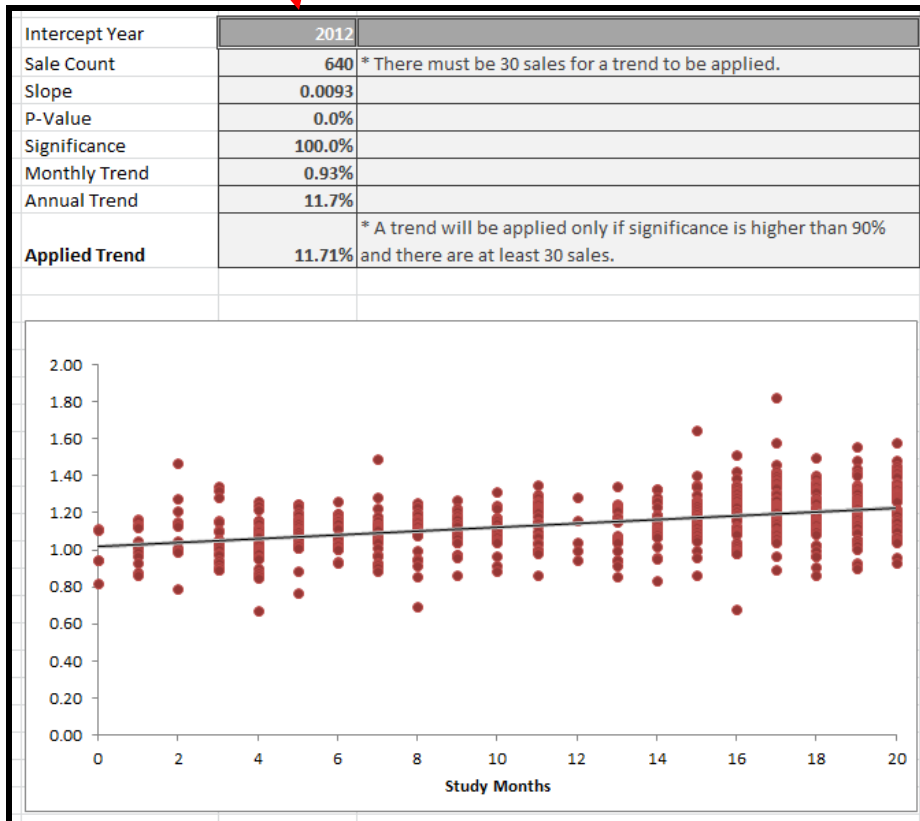
Enter Search Criteria		Extract Sales	Run Tcalc	Print Sales	Print Stats		
Ratio Study Selection-----	2012 EMV	 <p><b>SALES RATIO STUDY TEMPLATE</b></p>					
From This SALE DATE-----	1/1/2012						
To This SALE DATE-----	9/30/2013						
From This PARCEL #-----	01*						
To This PARCEL #-----	99*						
From This ADJ SALE PRICE-----							
To This ADJ SALE PRICE-----							
From This PROPERTY TYPE-----						From This Minimum Ratio-----	50%
To This PROPERTY TYPE-----						To This Maximum Ratio-----	200%
From This ACT YEAR BUILT-----						Time Adjustment for Sales-----	0.0%
To This ACT YEAR BUILT-----		Time Ajustment "TO" Date-----	01/01/2014				
From This ABOVE GRADE SF-----		<b>Sales Data Information</b>					
To This ABOVE GRADE SF-----		Total Sales Available-----	640				
From This QUALITY-----		Oldest Sale Date-----	1/1/2012				
To This QUALITY-----		Newest Sale Date-----	9/1/2013				
From This ARCH STYLE-----		Average Sale Price-----	\$220,674				
To This ARCH STYLE-----		Median Sale Price-----	\$209,000				

2. Press the “extract sales” button
3. You should now have a different “No. of queried sales” returned that matches the number of sales in the desired study.

- Press the "run tcalc" button. This will perform the tcalc analysis and automatically bring you to the "Trend Estimates" sheet.



- Compare to tcalc for consistency:



**Conclusion:**

Now that you have confirmed that you are achieving the exact same results generated by Tcalc you should be able to

1. Utilize the tool to quickly perform preliminary time trend analyses for the upcoming assessment.
2. Analyze the current stratification of property for time adjustment determinations to ensure that regions which have simply always been in place historically still make sense in your existing market place.
3. Double check time trend figures provided to you by the Department of Revenue.

**Disclaimer:**

Final time trends issued by the DOR should always be utilized when finalizing adjustments to the assessment. This program is intended to give appraisers another tool for performing data analyses.