



**MAAO**  
Minnesota Association  
of Assessing Officers

# **A Chip Off the Sales Comparison Approach**

A fundamental look of the commercial sales verification process and comparative analysis application

# Commercial Sales Verification

- ▶ Confirming the Sale – Every Sale Tells a Story
- ▶ Sales are verified to determine the **Market Value** of the **Real Property** that transacted.
- ▶ Compare each sale to the definition of Market Value and then determine if the sale and surrounding factors meet the statutory definition.

# Commercial Sales Verification

## § 272.03 DEFINITIONS.

### Subdivision 1. **Real property.**

(a) For the purposes of taxation, but not for chapter 297A, "real property" includes the land itself, rails, ties, and other track materials annexed to the land, and all buildings, structures, and improvements or other fixtures on it, bridges of bridge companies, and all rights and privileges belonging or appertaining to the land, and all mines, iron ore and taconite minerals not otherwise exempt, quarries, fossils, and trees on or under it.

# Commercial Sales Verification

- ▶ (b) A building or structure shall include the building or structure itself, together with all improvements or fixtures annexed to the building or structure, which are integrated with and of permanent benefit to the building or structure, regardless of the present use of the building, and which cannot be removed without substantial damage to itself or to the building or structure. (etal)

# Commercial Sales Verification

§ 272.03 Subdivision 8. **Market value.**

"Market value" means the usual selling price at the place where the property to which the term is applied shall be at the time of assessment; being the price which could be obtained at a private sale or an auction sale, if it is determined by the assessor that the price from the auction sale represents an arm's-length transaction. The price obtained at a forced sale shall not be considered.

# Commercial Sales Verification

## ▶ **Qualified Sales**

- Set the benchmarks from which we set and defend our assessment.
- Provide the data for sales ratio criteria.
- Used for Local Government Aids.
- Used by the public and professionals - some of which include owners or their representative seeking relief.

# Commercial Sales Verification

- ▶ Some of the verification is clerical in nature.
- Verifying all of the information originally completed by the submitter.
- Completing the fields not originally completed by the submitter such as: year built and gross building area.
- Are your records reflective of the conditions of the subject as of the date of sale? E.g. Condition, Occupancy.
- Do Deed Restrictions exist which prohibit the Buyer from utilizing the property to it's highest and best use?
- Are there any cellular towers/antenna's or billboards located on the property?
- Are there any franchise tenants occupying the leased space?
- Is it owner-occupied, single tenant? Or is it leased, single or multi-tenant?

# Commercial Sales Verification

- ▶ Was the property listed “for sale or for lease” on the open market? If so, save a copy of the listing and include it in your file. This factual market data can be utilized when asked what market data you did consider when establishing your assessment on both the subject and other similar properties within your local market.
- ▶ If you are unable to find a listing, remember to ask how the buyer learned that the property was for sale during the telephone interview.
- ▶ Complete a Commercial Data Sheet or Field Report prior to the telephone interview. This helps you familiarize yourself with the subject and allows you opportunities to inquire with any additional questions you have regarding the subject.



# Commercial Sales Verification

- ▶ Your office should have a commercial sales verification questionnaire.
- ▶ Modifications may need to be made based on the property type transacting such as a Hotel or Mini-Storage/Mini-Warehouse/Self-Storage facility.
- ▶ Contact both the Buyer and Seller to confirm the purchase information.
- ▶ Document the date contacted and who you verified the sale information with and their Title/Position.
- ▶ Obtain their e-mail address or further contact information, follow up the telephone call with a “thank you for verifying the terms of the sale with me today” e-mail and retain for your

# Commercial Sales Verification



# Commercial Sales Verification

## Sales Verification Questionnaire

Parcel Identification Number(s) _____	
Auditor ID (CRV) _____	eCRV # _____
Verified By _____	Date contacted _____
Verified with: Buyer _____ Seller _____ Name _____	
Confirm Purchase Information: Date of Sale _____ Purchase Price _____	
Terms: Cash   CFD   New Financing	Personal Property Value _____

- 1) How was the property **marketed** (auction, real estate agent, displayed For Sale by Owner sign, internet, etc.) and length of time on the market?

What was the property's original listing price? \_\_\_\_\_ Any price reductions? \_\_\_\_\_

**If the property was not listed by a real estate agent use tests 1, 2, & 3**

**Test 1:** Was the sale exposed to the open market, announced or promoted through realtor listings, auction, newspapers, publications, brochures, craigslist, or for sale by owner?

Yes or No (if no, go to test 2)

**Test 2:** Was an **appraisal done** prior to the sale to establish the sale price or used as a starting point for negotiations?

Yes or No If no, how did you arrive at a purchase price? \_\_\_\_\_ (if no, go to test 3)

**Test 3:** Did the sale involve a willing and informed Buyer and Seller under no duress to buy or sell and is the sale typical of the market? **Arm's-Length?**

Yes or No

*If you answered yes to any of these three tests, the sale is most likely open market.*

- 2) Was there an appraisal made on the property in the last three years? Would you be willing to share the property value indicated in the appraisal and purpose of the appraisal?
- 3) Was the seller/buyer a friend or relative? Have you had any other prior business relationship with the seller/buyer?
- 4) How much time elapsed between the date of the purchase agreement and the closing date?
- 5) Are there circumstances known to you which would have caused the seller to sell (or the buyer to buy) at a price below or above the **fair market price**? (i.e. short sale, pre-foreclosure, relative sale, cancellation of a previous sale, an estate sale)
- 6) Any **recent changes** to the property that affected the sales price?

Condition of property? \_\_\_\_\_ Improvements Needed \_\_\_\_\_

Recent Remodel? \_\_\_\_\_ Were funds of repairs (replace flooring, roofing, siding, windows, remodeling, etc.) included in the purchase price? What was the value/cost of these items?



# Commercial Sales Verification

- 1) Was the **property rented or leased at the time of sale**? (How long and for how much? Did this impact the sale price? Did this include an option to buy? If so, was the option to buy simply the first right of refusal or was a price established at the beginning of the lease?)
- 2) Is there a **leaseback agreement** between buyer/seller? (How long and for how much? Did this impact the sale price?)
- 3) What influenced you to buy this particular property rather than another? Did you consider any other properties before deciding to purchase this one? Would you be willing to share that information?
- 4) Have there been any changes in the property since you bought (sold) it? Are you planning any future changes to the property?
- 5) Would you please confirm **the planned use** of the property: Residential Seasonal Rec  
Agricultural Commercial/Industrial Other: \_\_\_\_\_

Sale good for study? Yes or No Reject#\_\_\_\_\_

Comments:

Additional income producing properties and agricultural sales questions:

- 1) If this was an income producing property was a **1031 exchange** involved? If yes, answer the following:
  - a. Were there other similar properties for sale at the same time?
  - b. Did the 1031 influence the purchase price?
  - c. Was there an extension for the 1031?
- 2) If this was an income producing property were there additional sources of income to the business such as Bar/Restaurant/Billboards etc.?
- 3) What is the **gross** potential income at the time of sale?
- 4) What is the **vacancy** and credit loss at the time of sale?
- 5) What are the operating **expenses** at the time of sale?
- 6) What is the **net operating income** at the time of sale?
- 7) Are there any tenants **on long term leases**? When are these leases set to renew?



# Commercial Sales Verification

## Additional Questions for **Apartments**:

1. Did the sale price include an existing business?  
If Yes, What is the value of the business and how was it determined?
2. Was the purchase price based on the properties net operating income?  
Existing Revenue \_\_\_\_\_  
Existing **Expenses** \_\_\_\_\_  
NET INCOME \_\_\_\_\_  
Cap Rate (mult) \_\_\_\_\_

3. Rental Income:

Unit Size (sq. ft.)	Type of unit	# units	Monthly Rent

4. Indicated **Vacancy** at time of sale:
5. Who are you major competitors:

## Additional Questions for **Hotel/Motel**:

1. Did the sale price include **an existing franchise**/business?
  - a. If Yes, What is the value of the business and how was it determined?
  - b. What franchise was purchased?
  - c. **Age of the FF&E** \_\_\_\_\_ **How often replaced** \_\_\_\_\_ **RCN** \_\_\_\_\_
2. Was the purchase price based on the properties net operating income?
  - a. Existing Revenue \_\_\_\_\_
  - b. Existing Expenses \_\_\_\_\_
  - c. **NET INCOME** \_\_\_\_\_
  - d. Cap Rate (mult) \_\_\_\_\_
3. Number of rooms available:
4. Room Types:
  - a. Number of Single
  - b. Number of Double
  - c. Number of Queen
  - d. Number of King
  - e. Number of Suites
5. Prior Year Average Daily Rate
6. Year to date **Average Daily Rate ADR**
7. Forecast Year End Average Daily Rate
8. Total number of Occupied Room Nights
- 9. Occupancy**
10. Who are you major competitors:



# Commercial Sales Verification



## Commercial Property Sale



Field Report

* County	_____	* Municipality	_____
* Property Id	_____	* Multiple PID	_____
* Address	_____		
* Auditor Id	_____		

* Information Source	_____	* Use as Comparable	_____
* Buyer Name	_____	* Interest Purchased	_____
* Seller Name	_____	Map Code	_____
* Sale Date	_____	* Towle Market Sector	_____
* Total Price	_____	Project Name	_____
* Down Payment Amount	_____	* Total Land Area	_____
* Personal Property Amount	_____	Usable Land Area	_____
Other Terms	_____	* Land Area Definition	_____
* CE Sale Price	_____	Topography	_____
* Spl Assmnts Paid by Buyer	_____	* Zoning	_____
* Spl Assessment Verified	_____	Site Utilities	_____
* Deed Type	_____	* Railroad Access	_____
* Assessment Year	_____	* Use Code	_____
* Land EMV	_____	Submitted By	_____
* Building EMV	_____	Submitted Date	_____
* Include in Ratio Study	_____	Phone Number	_____
* Verified With	_____	* Sale Exclusion	_____
* Verified Date	_____	Community	_____
* Verified By	_____	Neighborhood	_____
* Title of Contact	_____	Cash Equivalency Adj	_____
* Contact Phone Number	_____	* Rejection Code	_____
		Environmental Concerns	_____
* Ratio Study Comments	_____		
Summary Comments	_____		
Additional Comments	_____		

<b>Financing 1:</b>	Assumption	_____	<b>Financing 2:</b>	Assumption	_____
	Finance Type	_____		Finance Type	_____
	Mortgage CD Amount	_____		Mortgage CD Amount	_____
	Monthly Payment	_____		Monthly Payment	_____
	Interest Rate	_____		Interest Rate	_____
	Number of Payments	_____		Number of Payments	_____
	Balloon Date	_____		Balloon Date	_____



# Commercial Sales Verification



## Commercial Property Sale Field Report



* Excess Land	_____	Potential Gross Income (PGI)	_____
* Physical Condition	_____	Actual Proj. Estimate (PGI)	_____
Market Segment	_____	Income Year	_____
Year Built	_____	Vacancy Amt	_____
* Effective Year Built	_____	Vacancy Pct	_____
Number of Buildings	_____	Actual Proj. Estimate (Vacancy)	_____
* Primary Exterior Type	_____	Other Income Amt	_____
Secondary Exterior Type	_____	Other Income Pct	_____
* Roof Type	_____	Actual Proj. Estimate (Other)	_____
Roof Cover	_____	Expenses Amt	_____
* Primary Heating Type	_____	Expenses Pct	_____
Secondary Heating Type	_____	Actual Proj. Estimate (Expenses)	_____
* Primary Heating Pct	_____	Reserves Amt	_____
Secondary Heating Pct	_____	Reserves Pct	_____
First Floor Area	_____	Actual Proj. Estimate (Reserves)	_____
* Gross Building Area	_____		
Total Basement Area	_____		
Basement Use	_____		
Basement Finished SF	_____	* Construction Class	_____
Sprinklers Percentage	_____	(Up to 7)	
Number of Elevators	_____		
Avg Story Height	_____		
Number of Stories	_____		
Surface Parking Spaces	_____	* Construction Quality	_____
Surface Parking Type	_____	(Up to 6)	
Other Amenities	_____		
Perimeter Shape	_____		
Perimeter	_____		
Total Floor Area	_____	Avg Finished Ceiling Height	_____
NRA / GLA	_____	Garage Spaces	_____
Mezzanine Use	_____	Ramp Spaces	_____
Mezzanine SF	_____	Multiple Tenancy	_____
Total Units	_____	Rent Schedule	_____
1st Floor Use	_____		
2nd+ Floor Use	_____		
Second Floor Area	_____		
Total Office SF	_____	Net Operating Income	_____
Air Conditioner Pct	_____		
Avg Clear Height	_____		

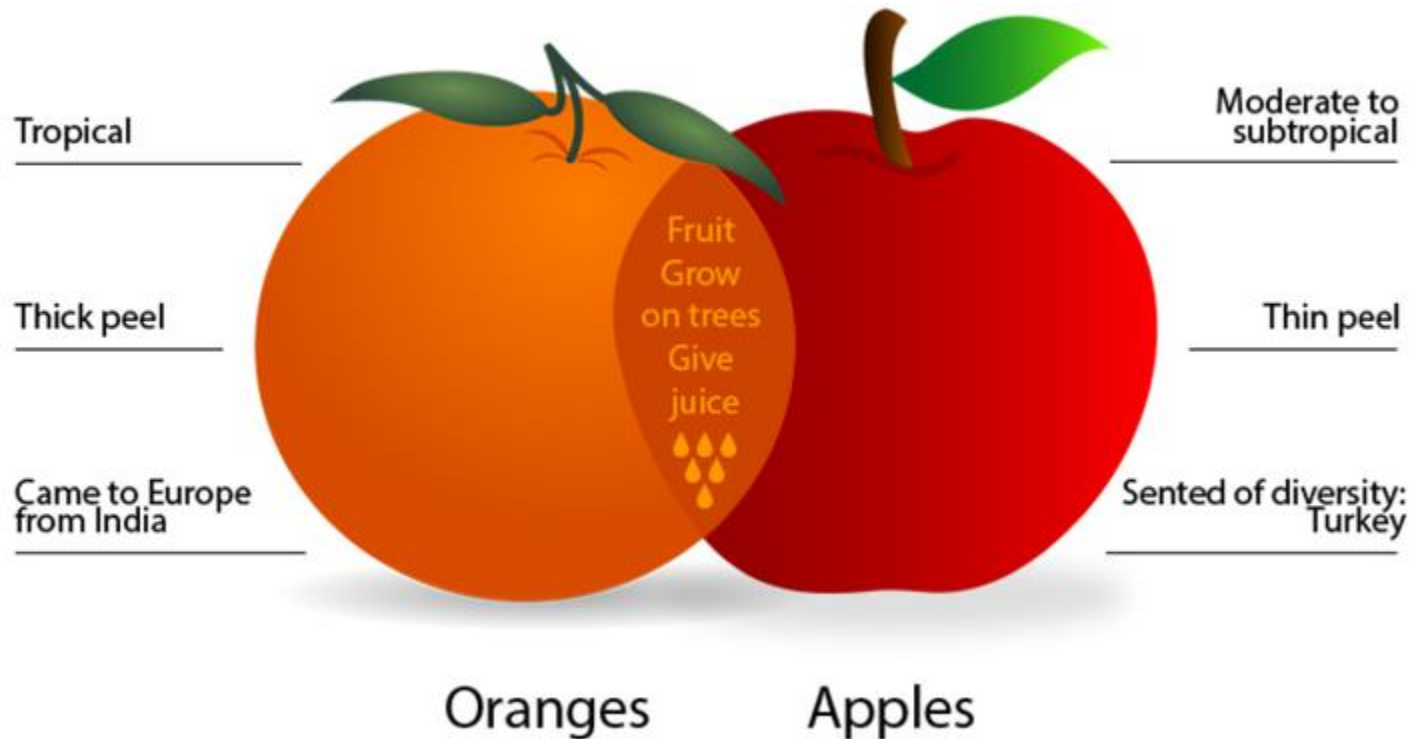


# Commercial Sales Verification

- ▶ You've completed your sales verification questionnaire and improved property data form.
- ▶ Are confident that your due diligence is representative of a qualified sale for the MN State Sales Ratio Studies.
- ▶ If in the future, you discover additional information that may disqualify the sale from being used, be sure to document the additional information and contact your State Sale Representative to inform them of the new information.
- ▶ You should feel confident that you have completed the necessary research to qualify the sale to be used by everyone.



# Elements of Comparison



# Elements of Comparison

- ▶ Elements of comparison are the characteristics of properties and transactions that help explain the variances in the prices paid for real property. The appraiser determines the elements of comparison for a given appraisal through market research and supports those conclusions with market evidence. When properly identified, the elements of comparison describe the factors that are associated with the prices paid for competing properties. The market data, if analyzed properly, will identify the elements of comparison within the comparable sales that are market-sensitive.

# Elements of Comparison

- ▶ The basic elements of comparison that should be considered in sales comparison analysis are as follows:
  - Real property rights conveyed – fee simple estate, leased fee interest, leasehold interest
  - Financing terms (i.e. cash equivalency) – all cash, market financing, seller-financing, special or atypical terms
  - Conditions of sale (i.e. motivation) – short sale, bank-owned real estate (REO)
  - Expenditures made immediately after purchase – new roof renovation costs
  - Market conditions – changes in supply and demand

# Elements of Comparison

- Location – corner lot, interior lot, access from main artery, heavily trafficked, proximity to amenities which complement the subject's property type
- Physical characteristics – size, soils, access, construction quality, condition
- Economic characteristics – expense ratios, lease provisions, management, tenant mix
- Legal characteristics – zoning, environment regulations, building codes, flood zones
- Non-realty components of value – personal property, furniture, fixtures, and equipment (FF&E), franchises, trademarks

# Sequence of Adjustments

- ▶ The sequence in which adjustments are applied to the comparable sales is determined by the market data and the appraiser's analysis of that data. As mentioned earlier, the first five elements of comparison in the list are considered transactional adjustments, while the latter five are considered property adjustments. The transactional adjustments are generally applied in the order listed. The property adjustments are usually applied after the transactional adjustments but in no particular order.

# Sequence of Adjustments

- ▶ The five categories of property adjustments – location, physical characteristics, economic characteristics, legal characteristics, and non-realty components – correspond to the criteria of highest and best use.
  - Physical possibility – location and physical characteristics
  - Legal permissibility – legal characteristics such as zoning
  - Financial feasibility – economic characteristics and non-realty components that influence the value of the real property.

# Sequence of Adjustments

- ▶ **Transactional and Property Adjustments:**
  - Real Property rights conveyed
  - Financing terms
  - Conditions of sale
  - Expenditures made immediately after purchase
  - Market Conditions
  - Location
  - Physical Characteristics
  - Economic Characteristics
  - Legal Characteristics
  - Non-realty components of value

# Sequence of Adjustments

- ▶ Transactional adjustments apply to components 1-5. Property adjustments apply to components 6-10. This is not the only order in which quantitative adjustments can be made. Adjustments may be applied in other sequences *if the market and the appraiser's analysis of the data so indicate*. Using the adjustment sequence, the appraiser applies successive adjustments to the prices of comparable properties. Most property types are adjusted on a unit price basis. *Property adjustments for location, physical characteristics, economic characteristics, legal characteristics, and non-realty components are typically applied to a unit price.*



# Reconciling Value Indications in the Sales Comparison Approach

- ▶ Reconciliation is necessary in nearly all sales analyses because the appraiser will usually analyze many sales that may lead to several different conclusions. These value indications are resolved into a range of value or a single value indication (i.e. a point estimate). It is important that the appraiser consider the strengths and weaknesses of each comparable sale, examining the reliability and appropriateness of the market data compiled and the analytical techniques applied in the comparative analysis. The appraisal report should clearly communicate how the appraiser arrived at the value indication using the sales comparison approach:
  - What does the data show and how did the appraiser come to the value conclusion?
  - What data was good, bad, missing, and so on?
  - How and why did the appraiser come to the conclusion in the sales comparison approach?

# Reconciling Value Indications in the Sales Comparison Approach

- ▶ Even when adjustments are supported by comparable data, the adjustment process and the indicated values should reflect judgment. Small inaccuracies can be compounded when several adjustments are added or multiplied, and thus seemingly precise arithmetic conclusions derived from adjusted data might contradict the appraiser's judgment.
- ▶ *The sales comparison approach is not formulaic. It does not lend itself to detailed mathematical precision. Rather, it is based on judgment and experience as much as quantitative analysis.*

# Reconciliation Checklist

- ▶ In the reconciliation process, the appraiser often asks several questions about the data and techniques used in the sales comparison approach such as, but not limited to, the following:
  - Is the comparable property similar in terms of physical characteristics and location?
  - Does the comparable property have the same highest and best use?
  - Was it developed, rented, or sold in the same market as the subject property?
  - Are the characteristics of the transaction similar to those expected for the subject property?
  - Would a potential buyer of the subject property consider the comparable property as a reasonable alternative to the subject property?
  - Is one method preferred over another given the data available for each analysis?

# Reconciliation Checklist

- ▶ In some cases, the appraiser may ask additional questions:
  - Are the expenses of the comparable properties' appropriate indicators of the expenses of the appraised property?
  - Are the estimates of depreciation in the appraised improvements justified?

# Units of Comparison and Real Property Interests in the Reconciliation Process

- ▶ Two related points should be stressed in any discussion of the reconciliation process. In arriving at a final value indication in the sales comparison approach, the appraiser must ensure that the value concluded is consistent with the value indications derived from the other approaches to value. This is especially important in regard to the date of an opinion of prospective value.

# Units of Comparison and Real Property Interests in the Reconciliation Process

- ▶ The appraiser must also consider any differences in the property rights appraised between the comparable properties and the subject because the comparable sales may include the transfer of a leased fee interest. If the data is not properly analyzed in the sales comparison approach, the value indication concluded for the leased fee interest in the subject property upon the achievement of stabilized occupancy might be lower or higher than the value for the fee simple estate.

# Comparative Analysis

- ▶ *Comparative Analysis: The process by which a value indication is derived in the sales comparison approach. Comparative analysis may employ quantitative or qualitative techniques, either separately or in combination.*

# Comparative Analysis

- ▶ Comparative analysis is the general term used to identify the process in the sales comparison approach in which quantitative and qualitative techniques are applied to comparable sales data to derive a value indication. An appraiser may use both quantitative adjustments and qualitative analysis in comparative analysis.



# Comparative Analysis

- ▶ The process of researching and applying adjustments involves a thorough analysis of the comparable sales to identify the elements of comparison that affect the value of the type of property being appraised. Quantitative adjustments derived in comparative analysis and applied to the sale prices of the comparable properties may be expressed in numerical amounts (e.g., dollars, percentages). The conclusions of qualitative analysis may be described in terms that clearly convey the relative difference between the comparable property and the subject in regard to each element of comparison (e.g., inferior, superior, similar). The evidence that supports a numerical adjustment and the source of all value conclusions must be readily understood by the intended users of the appraisal report.

# Comparative Analysis

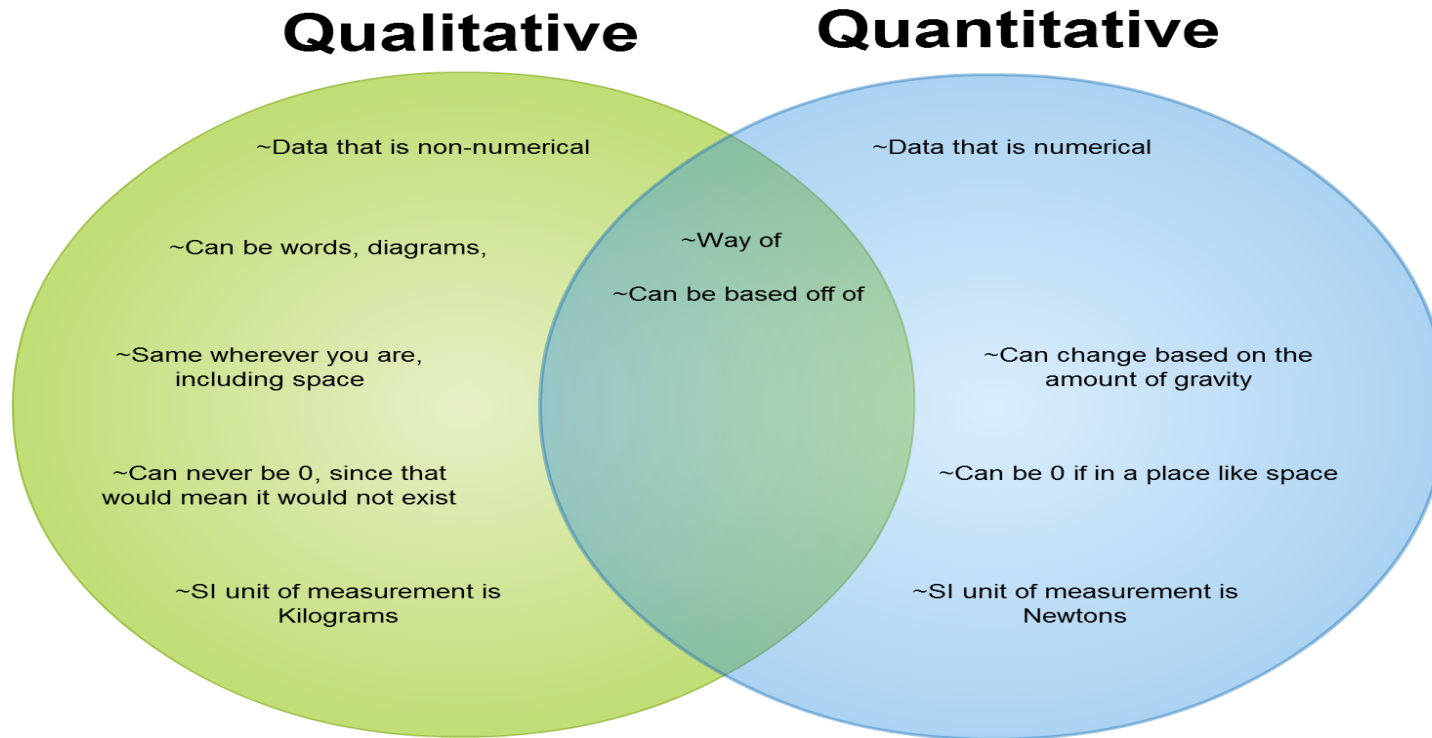
- ▶ When quantitative differences cannot be identified for a specific element of comparison, qualitative analysis is used to determine which comparable sales are inferior, similar, or superior to the subject property for the elements of comparison. The adjusted prices of the inferior and superior groups bracket the value of the subject and indicate a probable range of values. The appraiser concludes a single value indication for the subject property from this range of values.

# Comparative Analysis

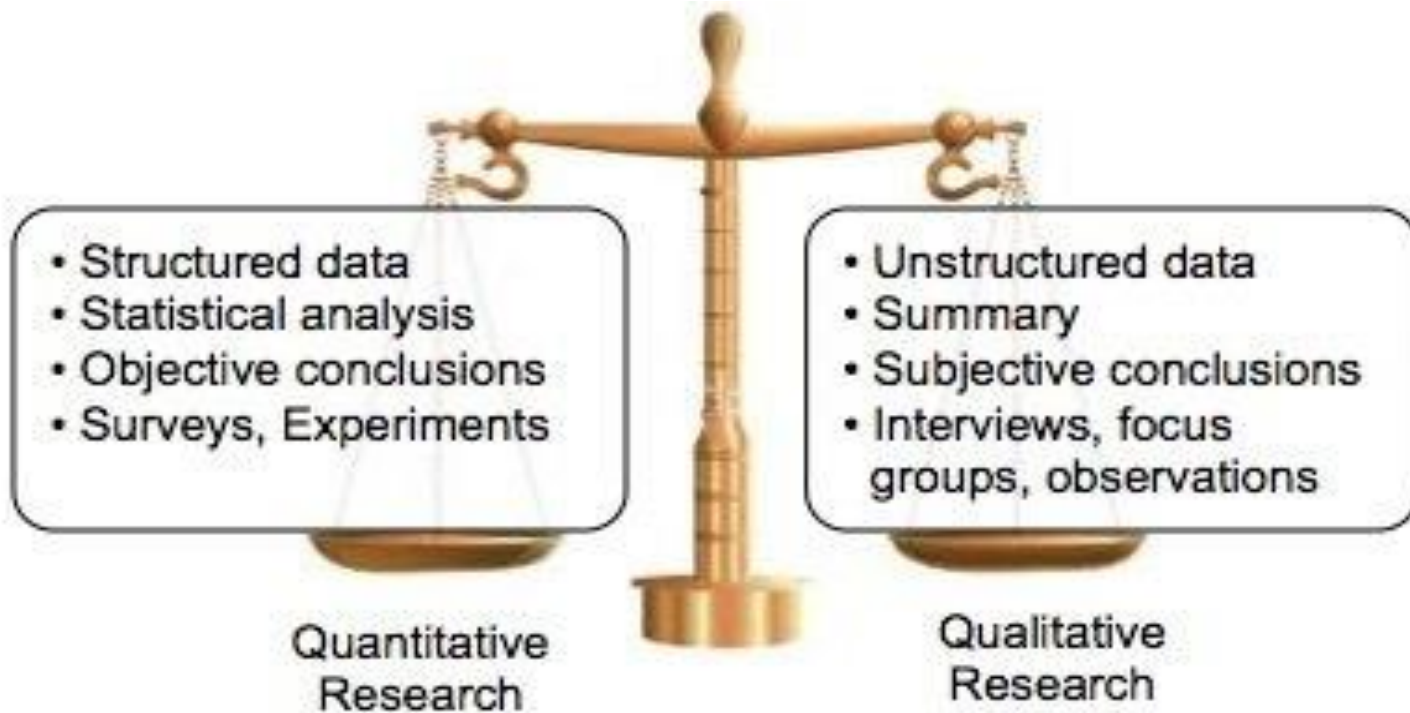
- ▶ In applying quantitative adjustments, qualitative analysis, or both, appraisers must ensure that their reasoning is clear and adequately explained in the appraisal report. The extent of narrative explanation required also depends on the complexity of the property being appraised. The more complex the property, the more factors that must be considered in the analysis and then explained to intended users of the appraisal.

# Quantitative Adjustments

## Qualitative vs. Quantitative



# Quantitative Adjustments



# Quantitative Adjustments

- ▶ Several techniques are available to quantify adjustments to the sale prices of comparable properties:
  - Data analysis techniques such as paired data analysis, grouped data analysis, and secondary data analysis
  - Statistical analysis, including graphic analysis and scenario analysis
  - Cost-related adjustments (cost to cure, depreciated cost)
  - Capitalization of income differences

# Quantitative Adjustments

## ▶ Data Analysis Techniques

- Paired data analysis is based on the premise that when two properties are equivalent in all respects but one, the value of the single difference can be measured by the difference in price between the two properties
- Paired data analysis should be developed with extreme care to ensure that the properties are truly comparable and that other differences do not exist, such as improvements made subsequent to the sale or additional approvals that had to be obtained.

# Quantitative Adjustments

- ▶ Additional methods of quantitative analysis include:
  - Statistical Analysis
  - Graphic Analysis
  - Cost Analysis/Cost-Related Adjustments
  - Capitalization of Income Differences



# Qualitative Analysis

- ▶ Qualitative analysis recognizes the inefficiencies of real estate markets and the difficulty of expressing adjustments with mathematical precision. It is essential; therefore, the appraiser explain the analytical process and logic applied in reconciling value indications using qualitative analysis techniques such as
  - Trend analysis
  - Relative comparison analysis
  - Ranking analysis

# Qualitative Analysis

- ▶ Statistical analysis and graphic analysis may serve as qualitative techniques when the results of those analyses do not support a precise adjustment amount but do support a qualitative conclusion about value trends. Likewise, when trend analysis yields enough evidence to support a precise adjustment amount, the technique could be considered a quantitative adjustment technique. The nature of the data analyzed with the various statistical techniques will dictate how the results of the analysis can be used, either as an adjustment or as a qualitative indicator.

# Qualitative Analysis

- ▶ Additional qualitative analysis include:
  - Trend Analysis
  - Relative Comparison Analysis
  - Ranking Analysis
  - Elements of Comparison
  - Transactional Adjustments
  - Property Adjustments

# Appraisal Institute – The 14<sup>th</sup> Edition of the Appraisal of Real Estate

## Qualitative Analysis Vs. Quantitative Analysis

### What's the Difference?

# Qualitative vs. Quantitative

**Qualitative Adjustments are purely relative (inferior, similar and superior).**

**Quantitative adjustments are specific numbers (% or dollar amounts).**

# Qualitative vs. Quantitative

**What does the Appraisal Institute say about qualitative analysis?**

**The following information is paraphrased from The 14<sup>th</sup> Ed. Of the Appraisal of Real Estate, published by the Appraisal Institute**

# Qualitative vs. Quantitative

- ▶ **Qualitative analysis recognizes the inefficiencies of real estate markets and the difficulty in expressing adjustments with mathematical precision. It is essential therefore, that the appraiser explains the analytical process and logic applied in reconciling the value indications using qualitative analysis techniques such as:**
  - **Trend analysis**
  - **Relative comparison analysis**
  - **Ranking analysis**

# Qualitative vs. Quantitative

- ▶ **Relative comparison analysis is the study of relationships indicated by market data without recourse to quantification. Many appraisers use this technique because it reflects the imperfect nature of real estate markets.**



# Qualitative vs. Quantitative

- ▶ **“Reliable results can usually be obtained by bracketing the subject between comparable properties that are superior and inferior to it... The appraiser must search the market diligently to obtain and analyze sufficient pertinent data to bracket the value of the subject.”**

# Qualitative vs. Quantitative

**What does the Appraisal Institute say about quantitative analysis?**

# Qualitative vs. Quantitative

- ▶ **Several techniques are available to quantify adjustments to the sale prices of comparable properties:**
  - **Paired sales or grouped data analysis**
  - **Statistical analysis**
  - **Co-related adjustments (cost to cure, depreciated cost)**
  - **Capitalization of income differences**

# Qualitative vs. Quantitative

**Appraisers can usually find some logic to support most quantitative adjustments given the number of tools available to them.**

# Qualitative vs. Quantitative

**Most quantitative adjustments appraisers make are simply qualitative adjustments presented as percentages. They are not directly supported by market data.**

**We should quantify adjustments based on market data whenever possible.**

# Qualitative vs. Quantitative

**No difference exists in terms of research or valuation between qualitative and quantitative analysis.**

**The two techniques simply represent two forms of presentation.**

# Qualitative vs. Quantitative

**As appraisers, we should select the presentation style that best communicates our analysis without being misleading. The best technique may be different from one data set to the next.**

# Qualitative vs. Quantitative

**My informal survey results also clearly highlight that qualitative analysis is a relatively common and accepted technique.**



# Qualitative vs. Quantitative

- ▶ **My position on the topic?**
- ▶ **No right or wrong answer.**

# Qualitative vs. Quantitative

**Historically, I've used qualitative analysis with fair or poor data sets. If I have sufficient data to quantify an adjustment, use it and explain your analysis. As appraisers, we should select the presentation style and accompanying narrative which best communicates our analysis without being misleading.**

# Qualitative vs. Quantitative

- ▶ **Above all, the appraiser must be careful to ensure that the adjustments made to the comparable sales reflect the reactions of market participants.**

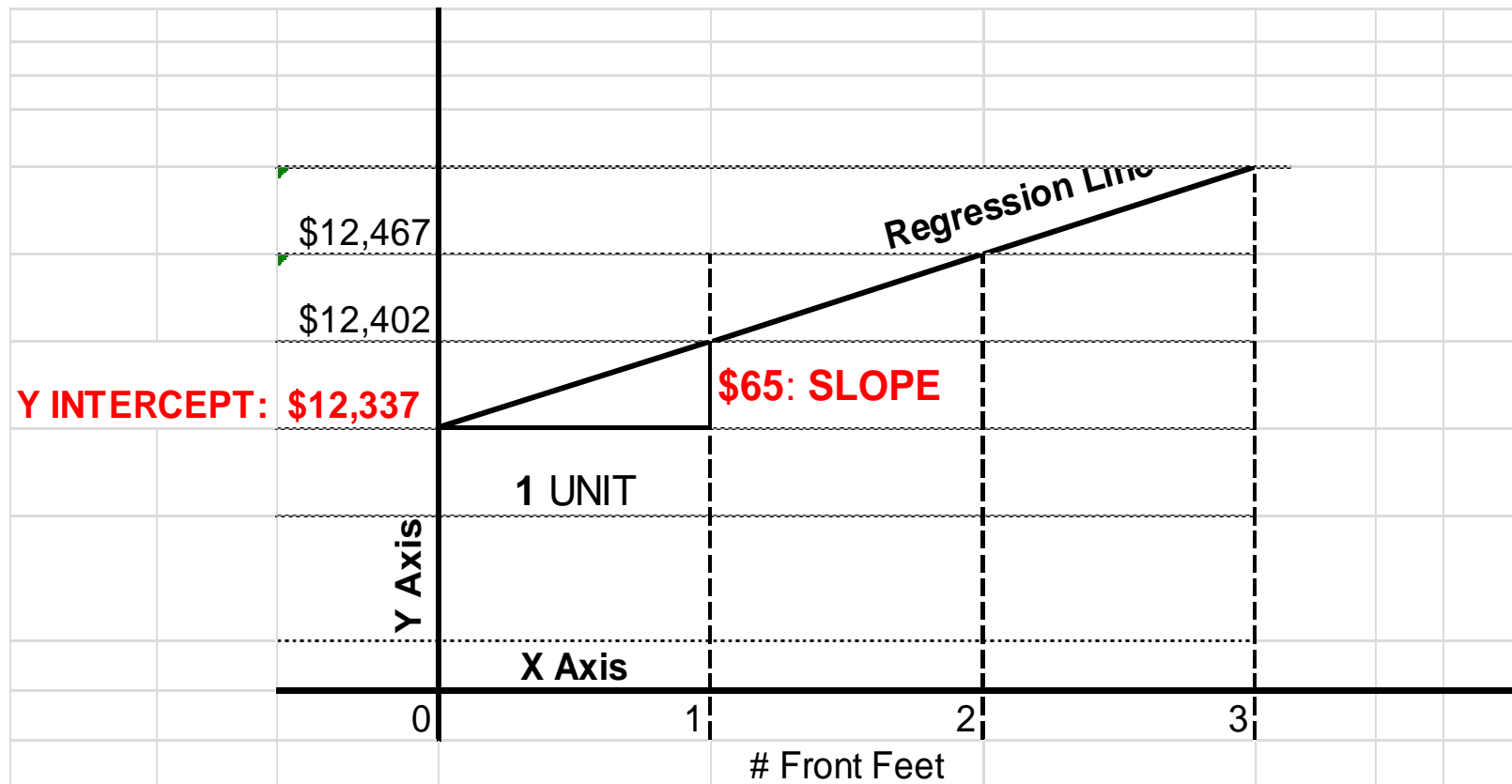
# LINEAR REGRESSION

- ▶ IS BASICALLY THE SLOPE OF THE AVERAGE LINE THROUGH THE DATA SET AND ITS' Y INTERCEPT.
  - ▶ THE CALCULATION IS ESSENTIALLY AN AVERAGE OF THE SQUARES OF THE X AND Y COORDINATE VALUES
  - ▶ Slope = 
$$\frac{\sum xy - [(\sum x \sum y) / n]}{\sum x^2 - [(\sum x)^2 / n]}$$
- Y-Intercept = Avg.y - (Slope x Avg.x)



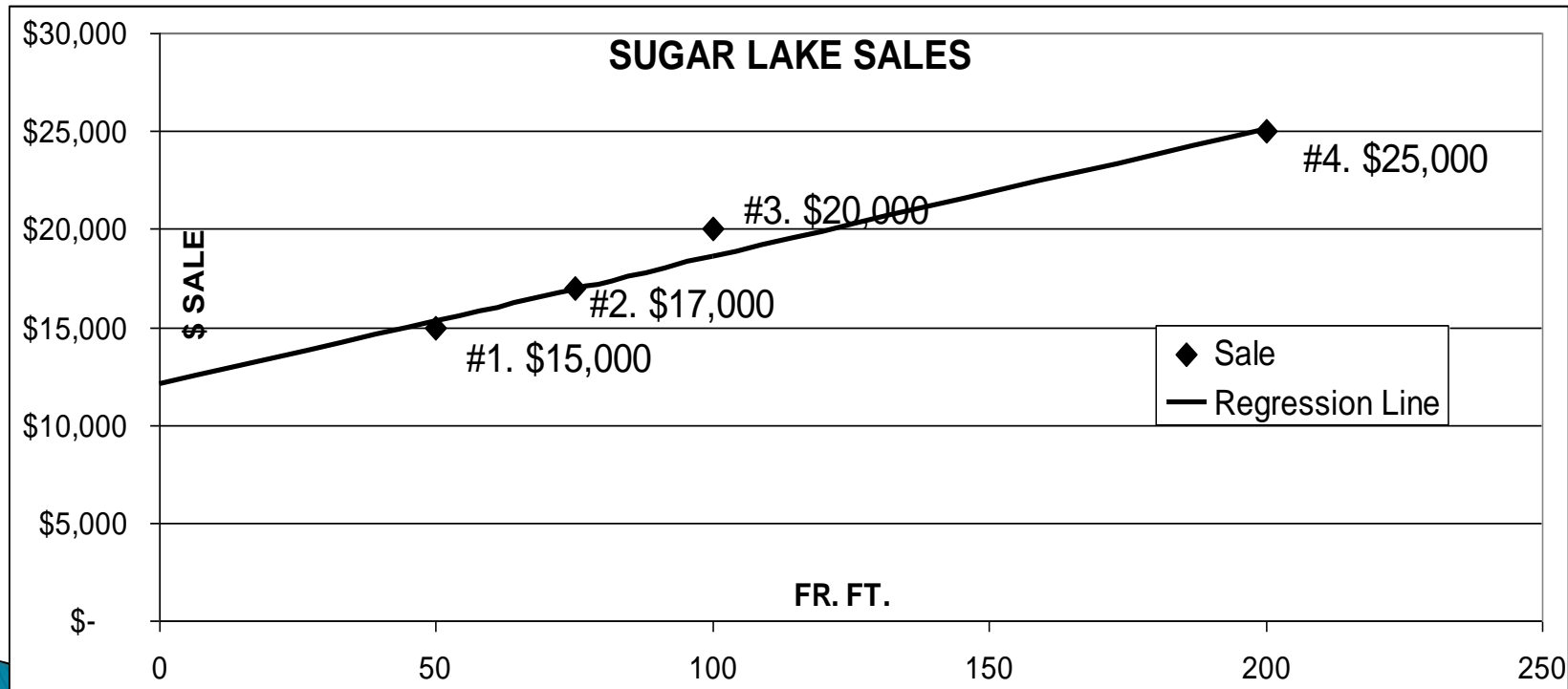
# REGRESSION RESULT

- ▶ Close-up View of Graph Illustrates Concept of **Slope & Y Intercept**



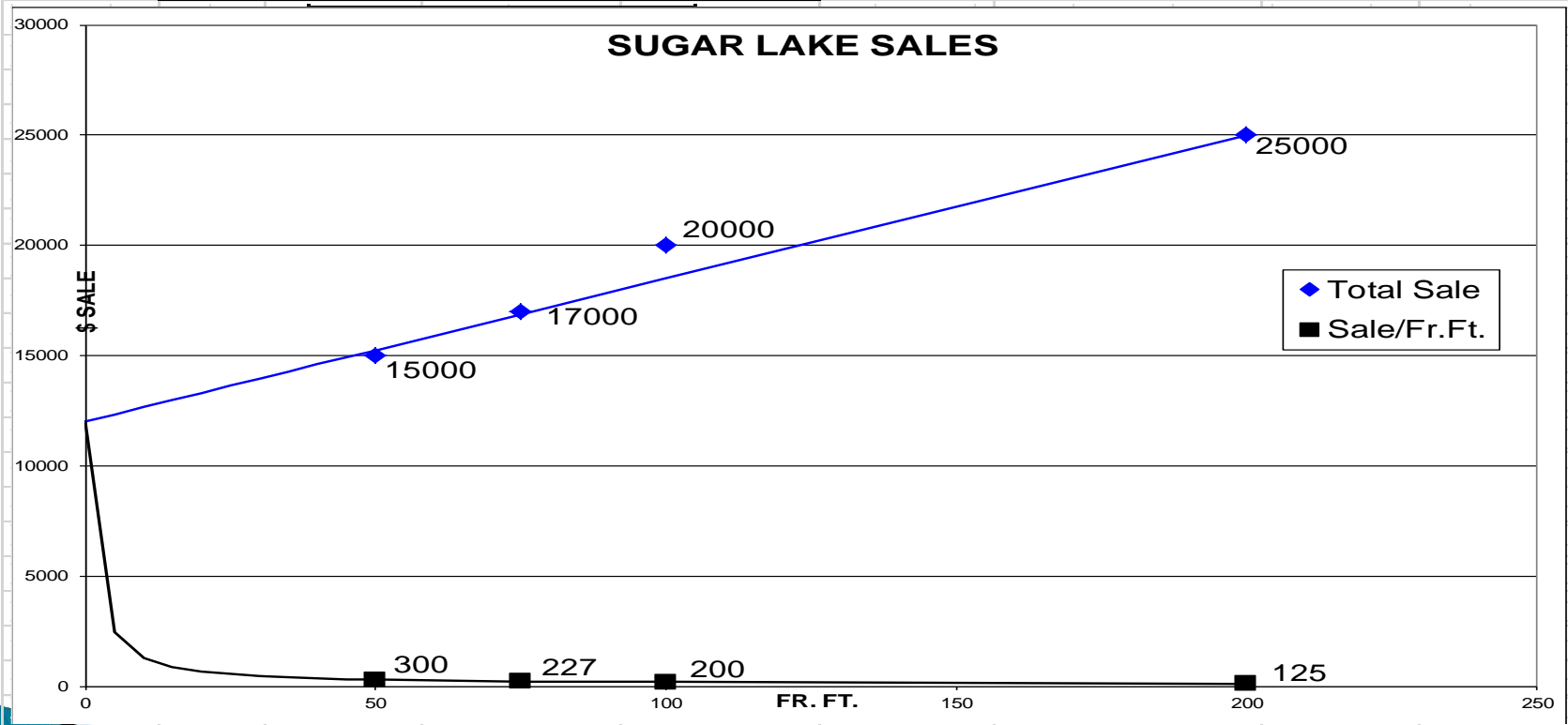
# LINEAR REGRESSION EXAMPLE

Sale #	Front Feet	Sale Price	Trend (T)	RATIO
	X	Y	$I + (m * X)$	T / Y
1	50	\$ 15,000	\$ 15,590	103.9%
2	75	\$ 17,000	\$ 17,217	101.3%
3	100	\$ 20,000	\$ 18,843	94.2%
4	200	\$ 25,000	\$ 25,349	101.4%
<b>LINEST (m):</b>		<b>\$ 65</b>	<b>Median:</b>	<b>101.3%</b>
<b>INTERCEPT (I):</b>		<b>\$ 12,337</b>	<b>Avg. Dev.:</b>	<b>3.0%</b>

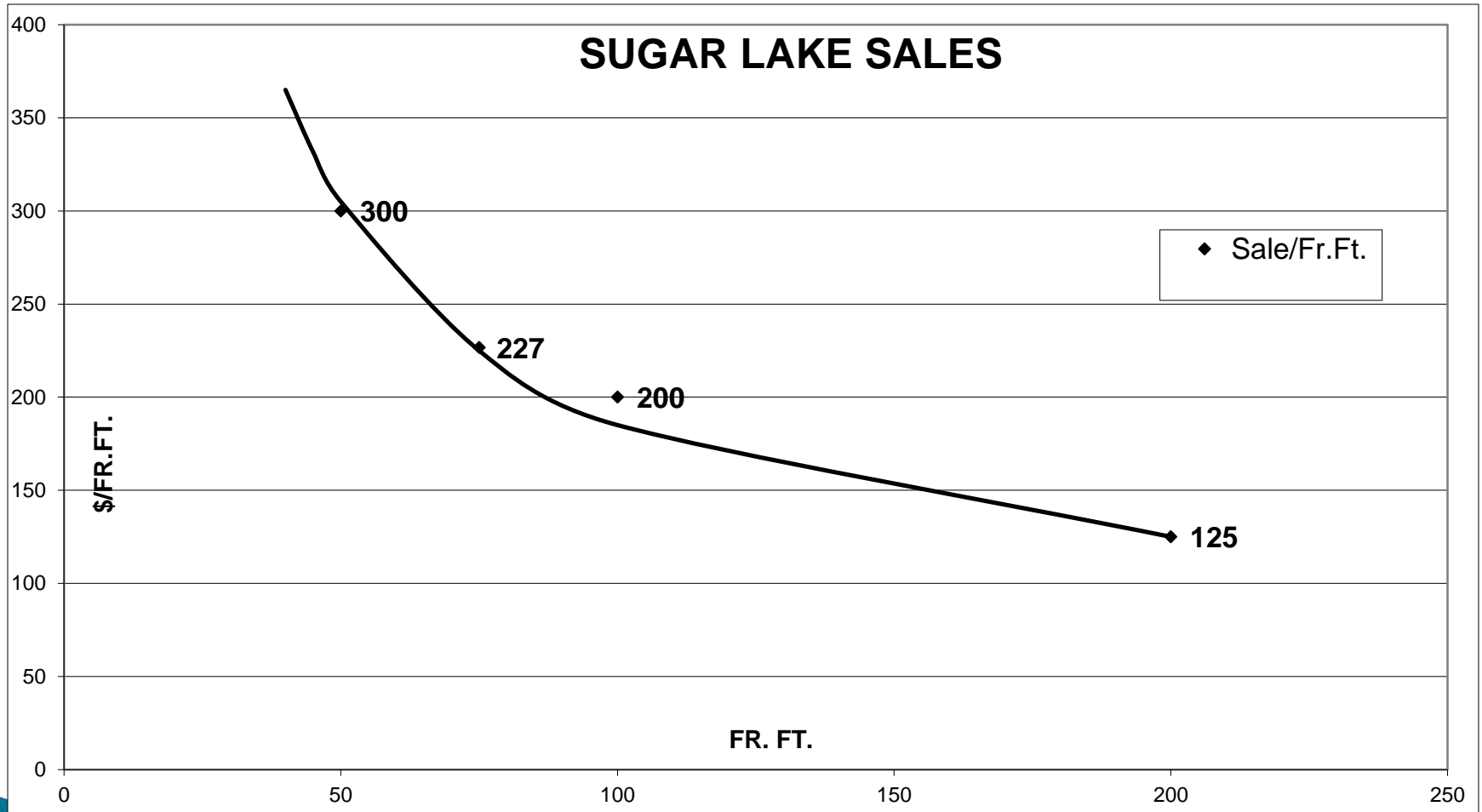


# Linear Regression Per Unit (Fr. Ft.) Comparison

Sale #	Front Feet	Sale Price	Trend (T)	Sale/Fr.Ft.	Fr.Ft. Trend (Tff)
	X	Y	$I + (m * X)$	$Y / X$	$T / X$
1	50	\$ 15,000	\$ 15,590	\$ 300	\$ 312
2	75	\$ 17,000	\$ 17,217	\$ 227	\$ 230
3	100	\$ 20,000	\$ 18,843	\$ 200	\$ 188
4	200	\$ 25,000	\$ 25,349	\$ 125	\$ 127
<b>LINEST (m):</b>		<b>\$ 65</b>			
<b>INTERCEPT (I):</b>		<b>\$ 12,337</b>			



# CLOSE VIEW OF PER UNIT GRAPH





# Uses of Linear Regression: MCAST

In Compliance		In Compliance		Percentage of Change Needed	
# of Sales (w/extremes)	83	NO	Price Related Bias*	-2.98%	No indication of bias because the market has less than 30 sales OR it is not statistically significant
Median Sales Ratio	85.26%		Standard Error	0.02	
Mean Sales Ratio	87.00%		T-Value	-1.276	
Weighted Mean Ratio	85.15%		d.f.	74	
# of Sales (no extremes)	76	YES	P-Value	0.20599	With Market Condition Adjustment Applied <span style="border: 1px solid black; padding: 2px;">10.26%</span>
Coefficient of Dispersion	8.64		Significance	79.40%	
Price Related Differential	1.01	YES	*The PRB is a measure of vertical equity.		Target Ratio <span style="border: 1px solid black; padding: 2px;">94%</span>
			sale ratios will DECREASE <span style="float: right;">2.98%</span>		

### PRB Scatter Chart

### Bell Curve

### Ratio Ranges

<	45%	0	
45%	< & >	50%	0
50%	< & >	55%	0
55%	< & >	60%	0
60%	< & >	65%	2
65%	< & >	70%	1
70%	< & >	75%	8
75%	< & >	80%	10
80%	< & >	85%	19
85%	< & >	90%	14
90%	< & >	95%	15
95%	< & >	100%	5
100%	< & >	105%	0
105%	< & >	110%	1
110%	< & >	115%	0
115%	< & >	120%	1
120%	< & >	125%	0
<	130%	0	



# Uses of Linear Regression: Neighborhood Analysis

## REGRESSION

Land EMV	Footage	Nbd	Sale ratio
\$ 97,805	50	B	93.3%
\$ 74,962	50	C	99.1%
\$ 65,328	60	B	117.0%
\$ 105,113	60	B	91.5%
\$ 77,815	75	B	114.0%
\$ 92,708	75	B	102.8%
\$ 140,966	75	B	70.0%
\$ 97,959	80	B	101.8%
\$ 156,027	80	B	77.0%
\$ 105,265	85	B	97.9%
\$ 105,401	100	B	106.9%
\$ 60,063	100	C	111.3%
\$ 65,052	105	B	132.3%
\$ 190,840	130	B	66.8%
\$ 149,806	145	B	84.0%
\$ 90,397	150	B	118.1%
\$ 99,186	150	B	110.6%
\$ 167,841	151	B	85.0%
\$ 108,612	160	B	88.8%
\$ 253,038	200	B	70.6%
\$ 131,069	200	B	96.7%
\$ 158,798	345	B	98.2%
\$ 97,997	375	D	97.8%
\$ 125,690	465	C	97.4%
\$ 877,627	4,190	B	97.0%
<b>INTERCEPT:</b>	<b>\$ 90,607</b>	<b>Med:</b>	<b>97.82%</b>
<b>LINEST:</b>	<b>187</b>	<b>COD:</b>	<b>12.01%</b>

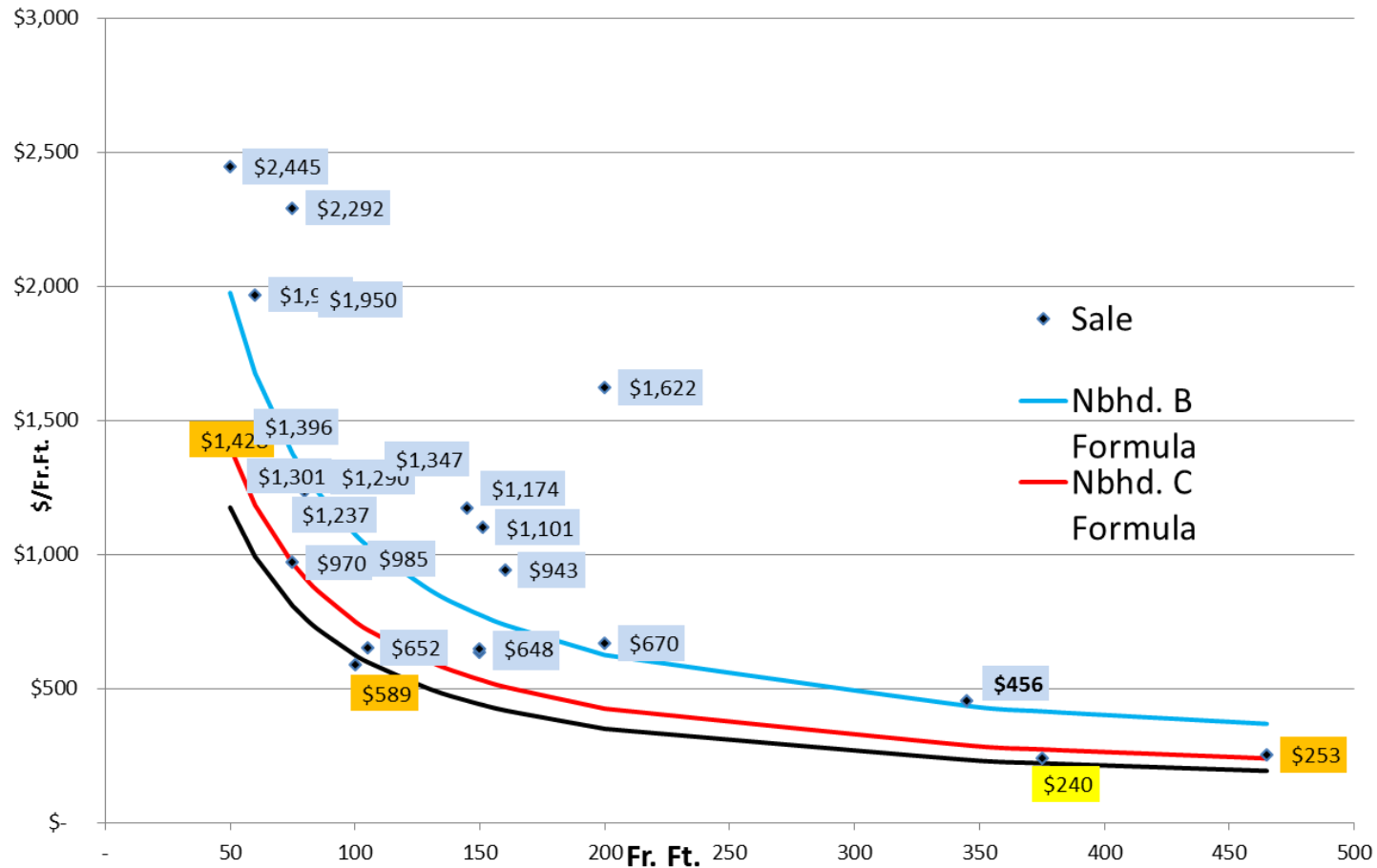
## 2014 Ratio Study

Land EMV	Footage	NBHD	Sale Ratio
\$ 97,805	\$ 50	B	93.3%
\$ 74,962	\$ 50	C	99.1%
\$ 105,113	\$ 60	B	91.5%
\$ 77,815	\$ 75	B	114.0%
\$ 105,265	\$ 85	B	97.9%
\$ 190,840	\$ 130	B	66.8%
\$ 108,612	\$ 160	B	88.8%
\$ 158,798	\$ 345	B	98.2%
\$ 97,997	\$ 375	D	97.8%
\$ 125,690	\$ 465	C	97.4%
\$ 877,627	\$ 4,190	B	97.0%
<b>INTERCEPT:</b>	<b>\$ 81,029</b>	<b>Med:</b>	<b>97.4%</b>
<b>LINEST:</b>	<b>189</b>	<b>COD:</b>	<b>7.0%</b>
\$ 74,962	\$ 50	C	99.1%
\$ 60,063	\$ 100	C	111.3%
\$ 97,997	\$ 375	D	97.8%
\$ 125,690	\$ 465	C	97.4%
<b>INTERCEPT:</b>	<b>\$ 57,492</b>	<b>Med:</b>	<b>98.4%</b>
<b>LINEST:</b>	<b>130</b>	<b>COD:</b>	<b>5.0%</b>

Land EMV	Footage	NBHD	Sale Ratio
\$ 97,805	50	B	93.3%
\$ 65,328	60	B	117.0%
\$ 105,113	60	B	91.5%
\$ 77,815	75	B	114.0%
\$ 92,708	75	B	102.8%
\$ 140,966	75	B	70.0%
\$ 97,959	80	B	101.8%
\$ 156,027	\$ 80	B	77.0%
\$ 105,265	\$ 85	B	97.9%
\$ 105,401	\$ 100	B	106.9%
\$ 65,052	105	B	132.3%
\$ 190,840	130	B	66.8%
\$ 149,806	\$ 145	B	84.0%
\$ 90,397	\$ 150	B	118.1%
\$ 99,186	\$ 150	B	110.6%
\$ 167,841	\$ 151	B	85.0%
\$ 108,612	\$ 160	B	88.8%
\$ 253,038	\$ 200	B	70.6%
\$ 131,069	\$ 200	B	96.7%
\$ 158,798	\$ 345	B	98.2%
\$ 877,627	\$ 4,190	B	97.0%
<b>INTERCEPT:</b>	<b>\$ 99,714</b>	<b>Med:</b>	<b>97.0%</b>
<b>LINEST:</b>	<b>186</b>	<b>COD:</b>	<b>13.64%</b>



# Uses of Linear Regression: Graphic Land Analysis

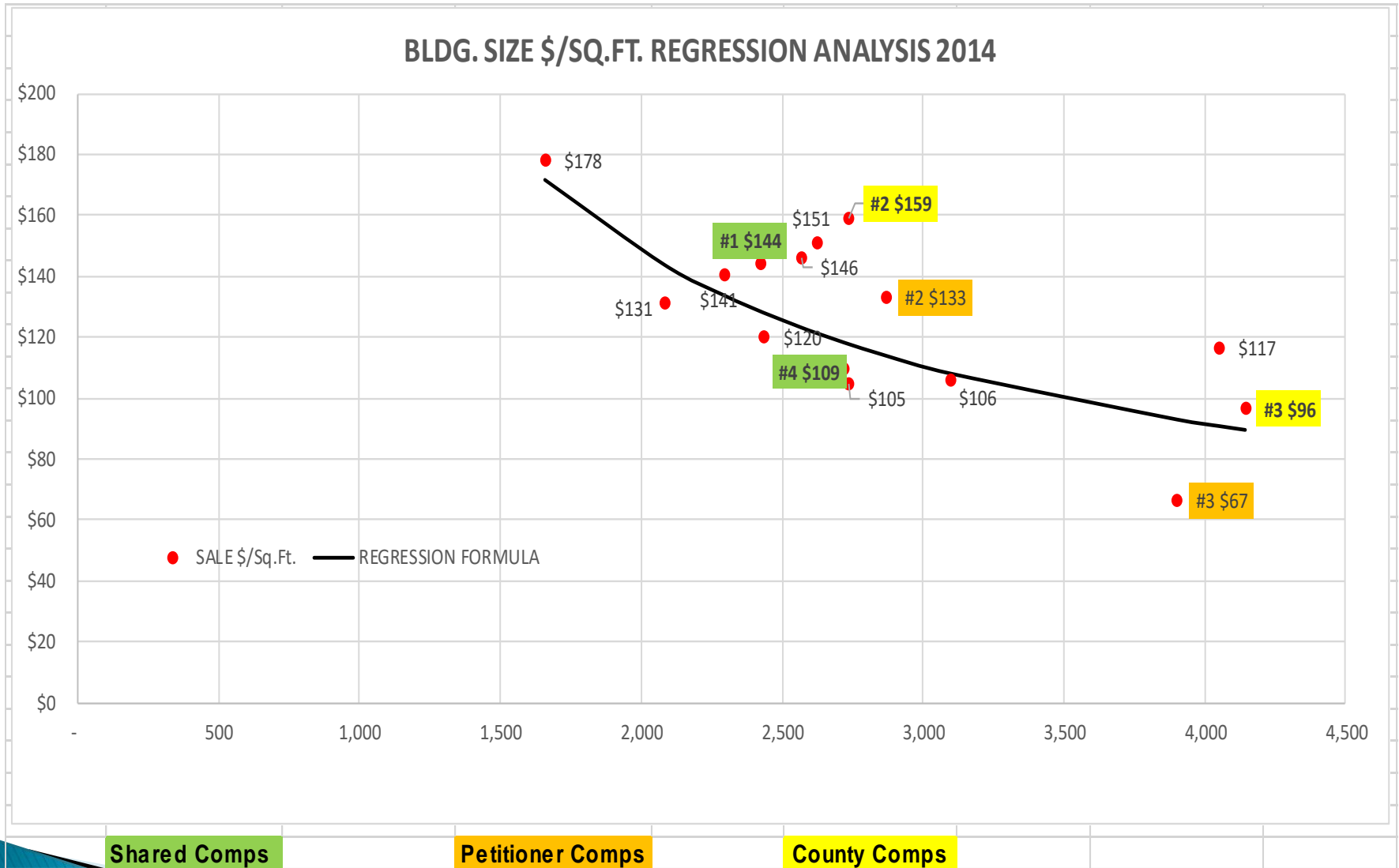


# Uses of Linear Regression: Building Size Adjustment

BUILDING BASE SQUARE FOOT ANALYSIS								
BLDG SIZE LINEAR REGRESSION ANALYSIS				Graphic Per Square Foot Analysis				
				SALE #	GLA Sq.Ft	SALE \$/Sq.Ft.	REGRESSION FORMULA	Ind. Bldg Value RCN
1	2,425	\$321,836		11	1,660	\$178	171.93	\$295,432
2	2,736	\$403,754		13	2,082	\$131	144.01	\$273,192
3	4,145	\$374,670		12	2,296	\$141	133.78	\$322,612
4	2,720	\$282,046		1	2,425	\$144	128.48	\$350,176
5	2,872	\$357,036		14	2,438	\$120	127.98	\$292,581
6	2,737	\$272,132		9	2,568	\$146	123.23	\$375,535
7	4,050	\$449,016		10	2,624	\$151	121.33	\$395,708
8	3,904	\$246,161		4	2,720	\$109	118.26	\$297,746
9	2,568	\$357,819		2	2,736	\$159	117.77	\$434,938
10	2,624	\$376,532		6	2,737	\$105	117.73	\$287,193
11	1,660	\$282,108		5	2,872	\$133	113.81	\$382,532
12	2,296	\$306,975		15	3,100	\$106	107.95	\$328,432
13	2,082	\$257,814		8	3,904	\$67	92.76	\$259,649
14	2,438	\$276,855		7	4,050	\$117	90.65	\$471,984
15	3,100	\$313,364		3	4,145	\$96	89.36	\$399,850
	<b>\$228,633</b>	<b>\$34</b>	<b>GLA Size Adj.</b>	Ind. Subject Bldg. EMV :		<b>\$365,024</b>	<b>91.83</b>	
	<b>Intercept</b>	<b>Slope</b>		Ind. Subject Total EMV :		<b>\$513,200</b>		



# Uses of Linear Regression: Appraisal Analysis



Shared Comps

Petitioner Comps

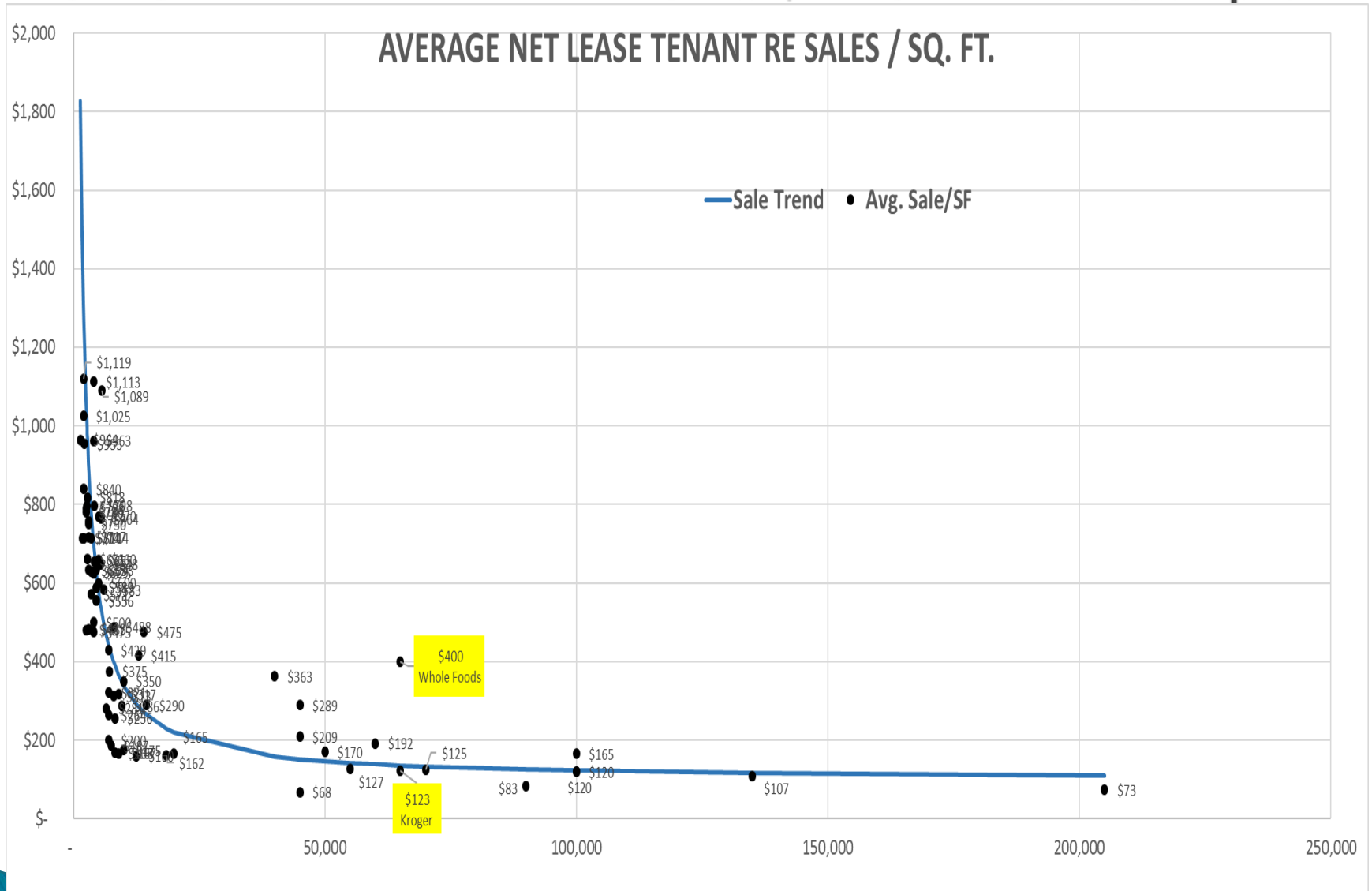
County Comps



**MAAO**  
Minnesota Association  
of Assessing Officers



# SINGLE TENANT NET LEASE a \$1.25 Trillion Sample



# COURT MID-BIG BOX NET LEASE a \$264 Billion Sample

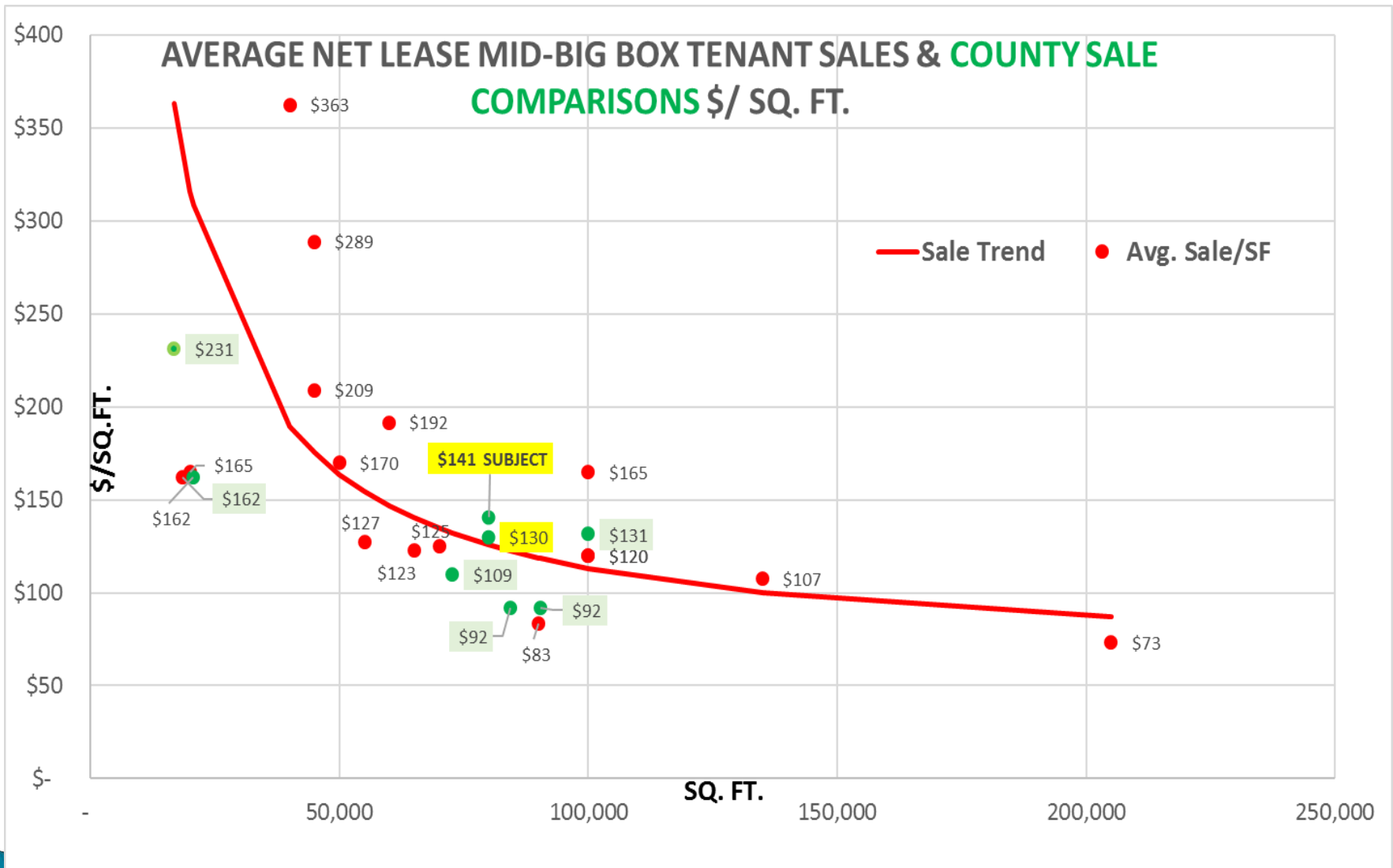
## 2019 NET LEASE MID-BIG BOX TENENT PROFILES WITH COUNTY 2015 MARKET COMPARISONS OVERLAY

Tenant	Ownership Type	Credit Rating	Avg. Bldg Size sq.ft.	# Locations	Leased RE EMV	Avg. Sale	Sale Trend	Avg. Sale/SF
Goodwill Monticello	Sale		16,863	1	\$ 3,900,000	\$ 3,900,000	\$ 363	\$ 231
Aldi	Private		18,500	10,366	\$ 31,098,000,000	\$ 3,000,000	\$ 337	\$ 162
Tractor Supply Co.	Public		20,000	1,766	\$ 5,827,800,000	\$ 3,300,000	\$ 316	\$ 165
Goodwill Forest Lake	Sale Rent Ro		20,600	1	\$ 3,337,000	\$ 3,337,000	\$ 309	\$ 162
Carmax	Public		40,000	195	\$ 2,827,500,000	\$ 14,500,000	\$ 189	\$ 363
Dick's Sporting Goods	Public		45,000	850	\$ 7,990,000,000	\$ 9,400,000	\$ 175	\$ 209
LA Fitness	Private		45,000	700	\$ 9,100,000,000	\$ 13,000,000	\$ 175	\$ 289
Best Buy	Public	BBB	50,000	1,008	\$ 8,568,000,000	\$ 8,500,000	\$ 164	\$ 170
Hobby Lobby	Private		55,000	822	\$ 5,754,000,000	\$ 7,000,000	\$ 155	\$ 127
Albertsons (Groc.)	Private		60,000	2,300	\$ 26,450,000,000	\$ 11,500,000	\$ 147	\$ 192
Kroger	Public	BBB	65,000	3,028	\$ 24,224,000,000	\$ 8,000,000	\$ 140	\$ 123
Academy Sports & Outdoors	Private		70,000	290	\$ 2,537,500,000	\$ 8,750,000	\$ 135	\$ 125
Shopko Fairmont	Sale Rent Ro		72,716	1	\$ 7,954,844	\$ 7,954,844	\$ 132	\$ 109
Shopko N. Branch	Sale		80,000	1	\$ 10,400,000	\$ 10,400,000	\$ 126	\$ 130
Shopko N. Branch	Sale Rent Ro		80,000	1	\$ 11,250,000	\$ 11,250,000	\$ 126	\$ 141
Shopko Winona	Sale Rent Ro		84,375	1	\$ 7,746,269	\$ 7,746,269	\$ 122	\$ 92
Kohl's	Public	BBB-	90,000	1,158	\$ 8,685,000,000	\$ 7,500,000	\$ 119	\$ 83
Shopko St. Cloud	Rent & Ro		90,414	1	\$ 8,466,667	\$ 8,300,654	\$ 118	\$ 92
Shopko Waite Park	Rent		100,000	1	\$ 13,479,295	\$ 13,126,902	\$ 113	\$ 131
BJ's Wholesale Club	Private	B	100,000	216	\$ 3,564,000,000	\$ 16,500,000	\$ 113	\$ 165
FedEx	Public	BBB	100,000	1,300	\$ 15,600,000,000	\$ 12,000,000	\$ 113	\$ 120
The Home Depot	Public	A	100,000	2,000	\$ 24,000,000,000	\$ 12,000,000	\$ 113	\$ 120
Lowe's	Public	BBB+	135,000	2,394	\$ 34,713,000,000	\$ 14,500,000	\$ 100	\$ 107
Walmart	Public	AA-	205,000	3,568	\$ 53,520,000,000	\$ 15,000,000	\$ 87	\$ 73
				<b>31,969.00</b>	<b>\$ 264,525,334,075</b>	<b>\$ 9,602,736</b>	<b>Avg. Dev.</b>	<b>26.6%</b>
				<b>INTERCEPT:</b>	<b>\$ 5,076,201</b>			
				<b>SLOPE:</b>	<b>\$ 62</b>			

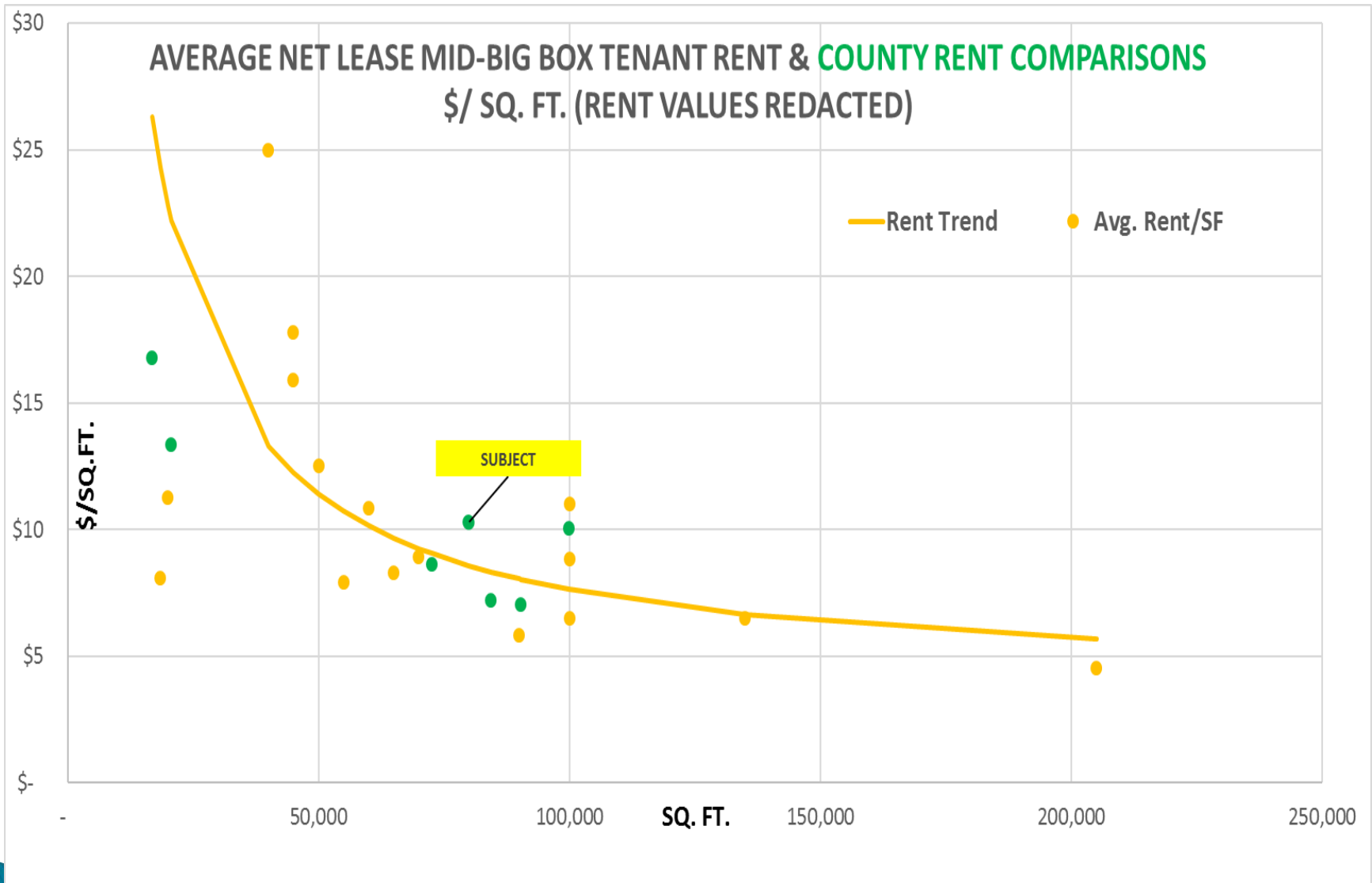




# MID – BIG BOX NET LEASE a \$264 Billion Sample



# MID – BIG BOX NET LEASE a \$264 Billion Sample

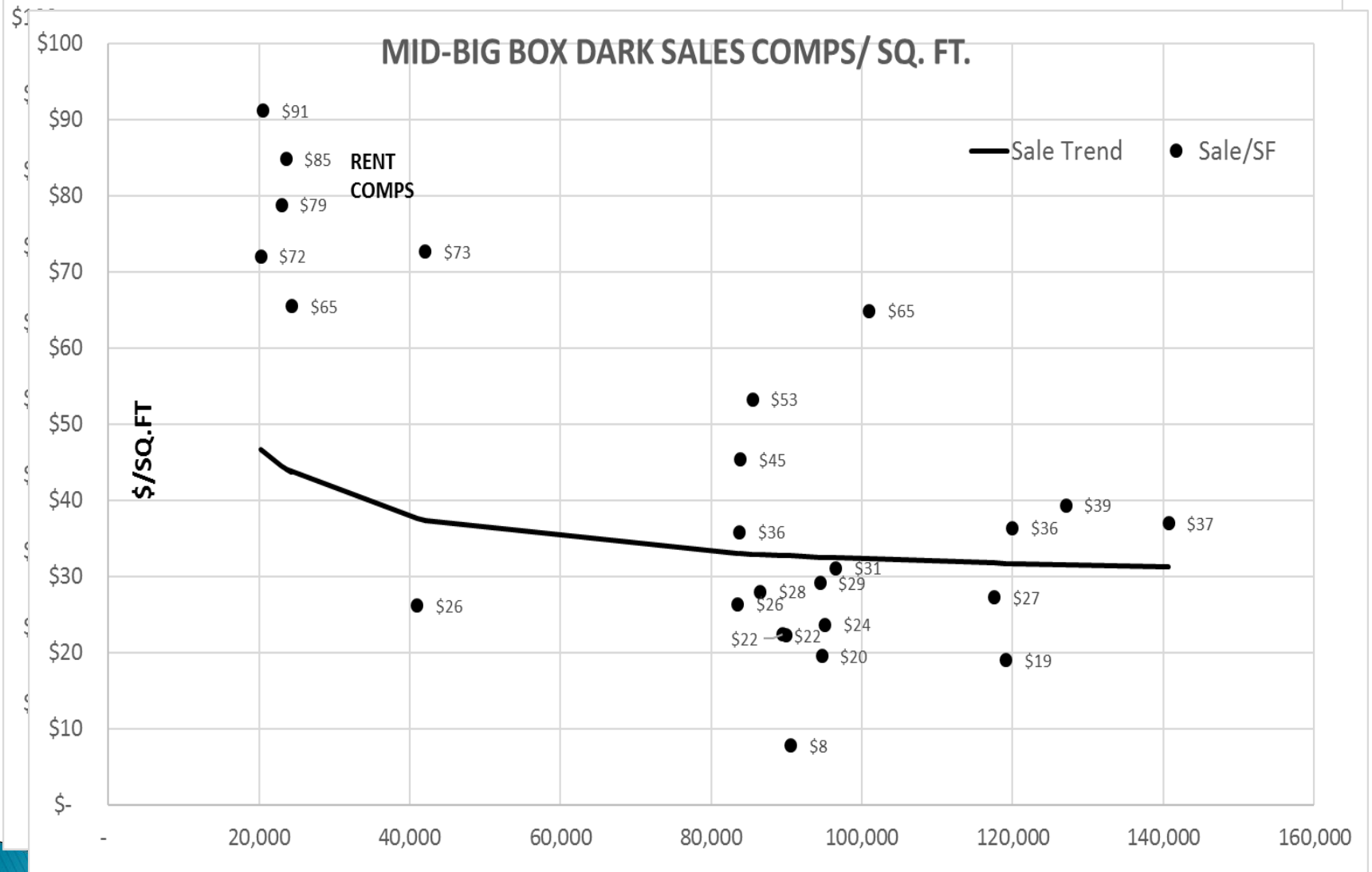


# COURT MID-BIG BOX DARK a \$61.2 Million Sample

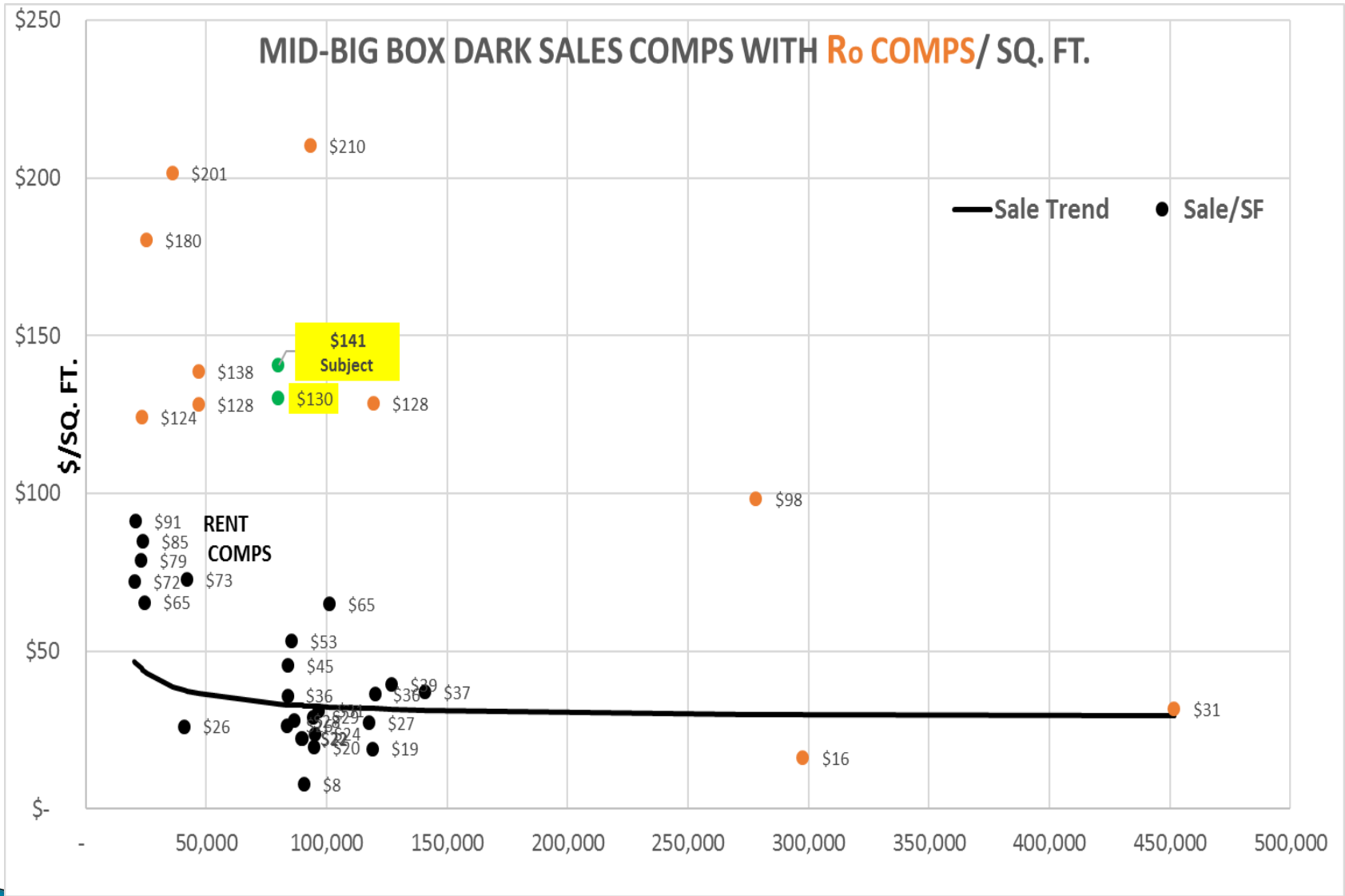
2015 NET LEASE MID-BIG BOX DARK MARKET APPRAISAL COMPARABLES								
Tenant	Ownership Type	Credit Rating	Avg. Bldg Size sq.ft.	# Locations	RE EMV	Avg. Sale	Sale Trend	Sale/SF
3 Planet Fit Mankato	Rent		20,241	1	\$ 1,457,527	\$ 1,457,527	\$ 47	\$ 72
Aldi Hutchinson (Frmr Cub)	Rent		20,577	1	\$ 1,875,624	\$ 1,875,624	\$ 46	\$ 91
4 Planet Fit Westgate Ctr St.	Rent		23,000	1	\$ 1,812,121	\$ 1,812,121	\$ 44	\$ 79
5 Faceway Foods Rochester	Rent		24,352	1	\$ 1,593,952	\$ 1,593,952	\$ 44	\$ 65
8 Ashley Furn. Hutch	Rent		23,600	1	\$ 2,002,424	\$ 2,002,424	\$ 44	\$ 85
3 Walmart Waseca	Dark Sale		41,000	1	\$ 1,070,691	\$ 1,070,691	\$ 38	\$ 26
7 Econo Foods Hutch.	Rent		42,071	1	\$ 3,055,103	\$ 3,055,103	\$ 37	\$ 73
4 Kmart Int. Falls	Dark Sale		83,552	1	\$ 2,200,000	\$ 2,200,000	\$ 33	\$ 26
5 K-Mart Fergus Falls & #21	Listing		83,776	1	\$ 3,000,000	\$ 3,000,000	\$ 33	\$ 36
4 K-Mart Winona	Listing/Sale		83,876	1	\$ 3,800,000	\$ 3,800,000	\$ 33	\$ 45
6 Home Furn. Roseville	Dark Sale		85,476	1	\$ 4,550,000	\$ 4,550,000	\$ 33	\$ 53
9 Kmart Monticello	Dark Sale		86,479	1	\$ 2,420,000	\$ 2,420,000	\$ 33	\$ 28
3 Target New Ulm	Listing		89,490	1	\$ 2,000,000	\$ 2,000,000	\$ 33	\$ 22
1 Target Austin	Listing		89,908	1	\$ 2,000,000	\$ 2,000,000	\$ 33	\$ 22
2 Walmart Little Falls	Listing		90,576	1	\$ 700,000	\$ 700,000	\$ 33	\$ 8
1 Kmart Marshall & #11	Dark Sale		94,688	1	\$ 1,850,000	\$ 1,850,000	\$ 32	\$ 20
2 Kmart Dundas	Dark Sale		94,479	1	\$ 2,750,000	\$ 2,750,000	\$ 33	\$ 29
7 Home Depot Cottage Grove	Dark Sale		95,096	1	\$ 2,250,000	\$ 2,250,000	\$ 32	\$ 24
11 Kmart Austin	Dark Sale		96,534	1	\$ 3,000,000	\$ 3,000,000	\$ 32	\$ 31
K-Mart Wauwatosa, WI	Rent		101,000	1	\$ 6,549,697	\$ 6,549,697	\$ 32	\$ 65
12 Lowes Rogers	Dark Sale		117,609	1	\$ 3,200,000	\$ 3,200,000	\$ 32	\$ 27
8 Walmart St. Cloud	Dark Sale		119,141	1	\$ 2,265,000	\$ 2,265,000	\$ 32	\$ 19
K-Mart Greenfield, WI	Rent		120,000	1	\$ 4,363,636	\$ 4,363,636	\$ 32	\$ 36
10 Lowes Cambridge	Dark Sale		127,082	1	\$ 5,000,000	\$ 5,000,000	\$ 32	\$ 39
5 Walmart Blaine	Dark Sale		140,684	1	\$ 5,200,000	\$ 5,200,000	\$ 31	\$ 37
				<b>20.00</b>	<b>\$ 61,224,127</b>	<b>\$ 3,061,206</b>	<b>Avg. Dev.:</b>	<b>35.1%</b>
					<b>INTERCEPT:</b>	<b>\$ 364,190</b>		
					<b>SLOPE:</b>	<b>\$ 29</b>		



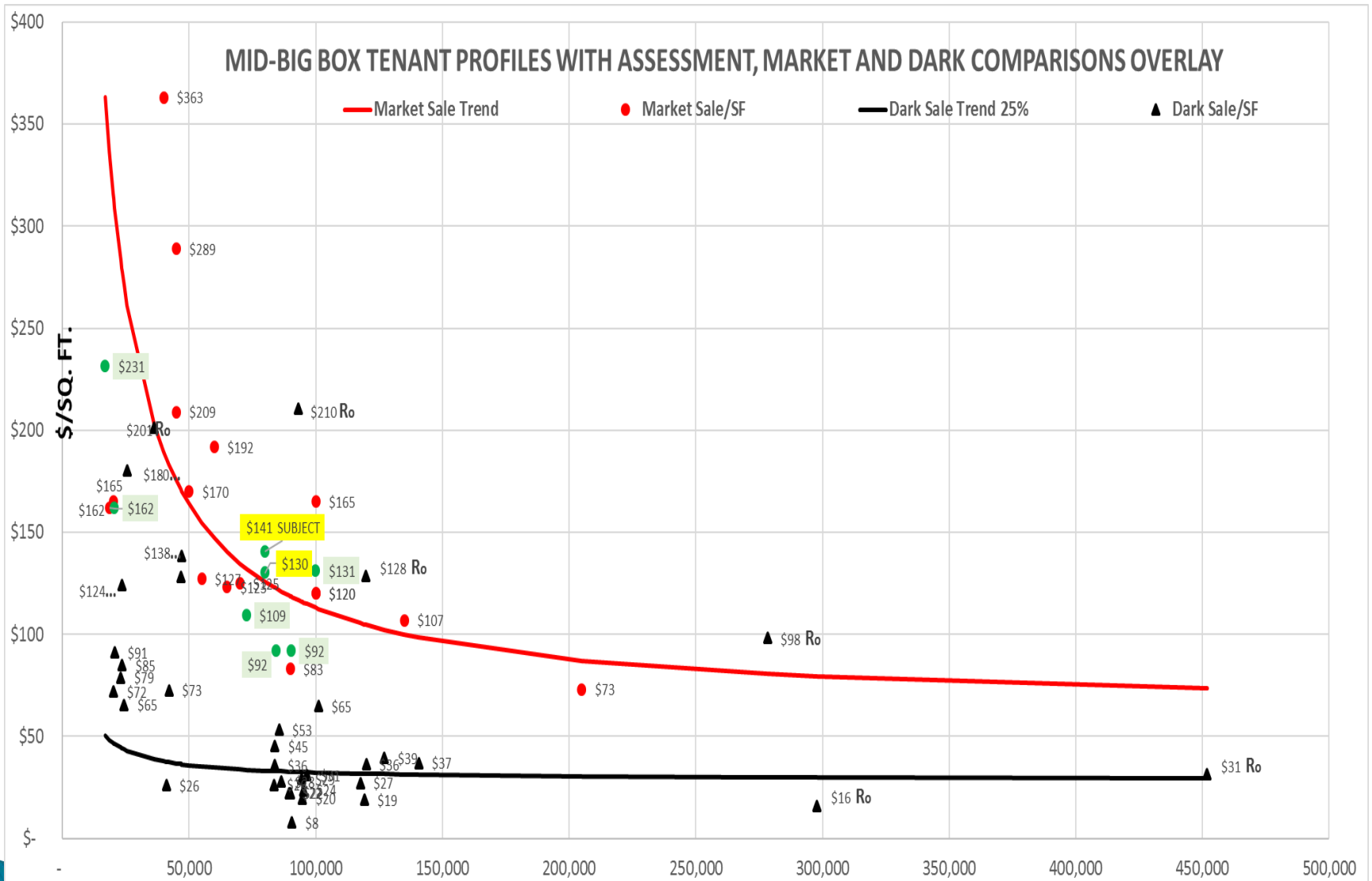
# COURT MID-BIG BOX DARK a \$61.2 Million Sample



# COURT DARK SALES COMPS WITH $R_o$ COMPS

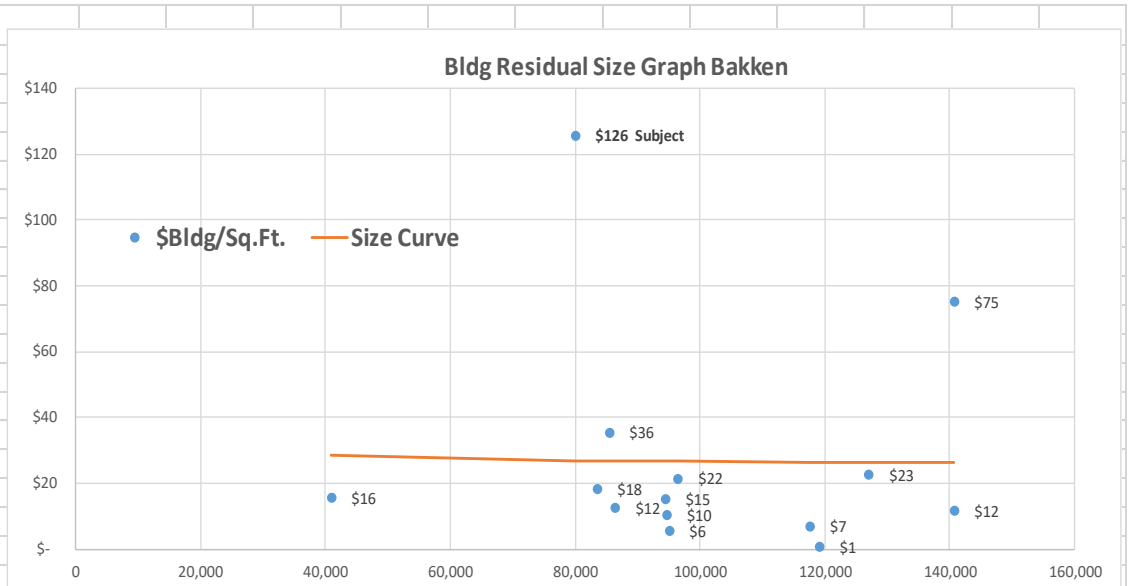


# MID-BIG BOX MARKET COMPARISON DARK Vs. LEASED

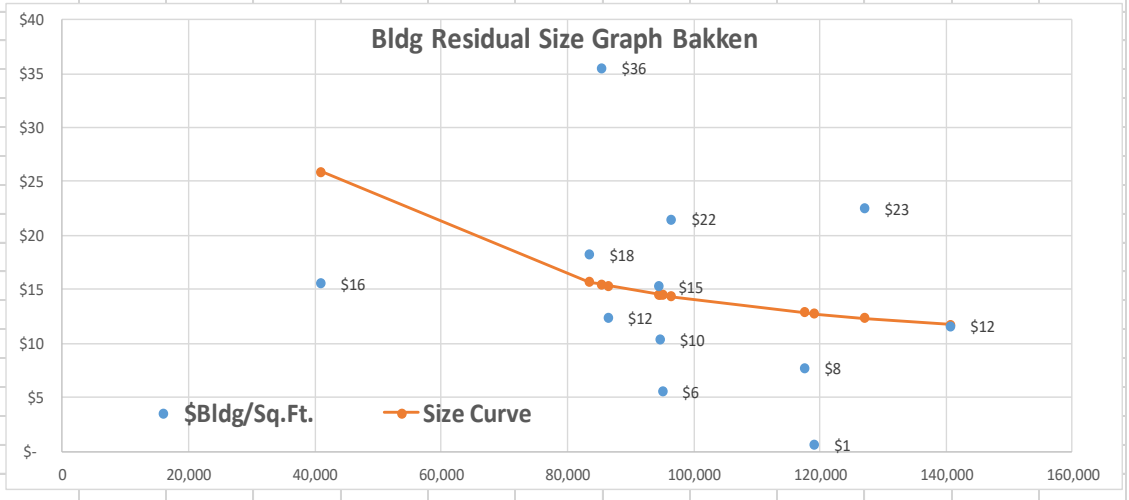


# SALES COMPARISON QUALITY DARK VS LEASED

Sale No.	Depr. Value Improvements	Building Sq. Ft.	Bldg/Sq.Ft.	Size Curve
3	\$ 638,466	41,000	\$ 16	\$ 28
Subj.	\$ 10,050,000	80,000	\$ 126	\$ 27
4	\$ 1,522,642	83,552	\$ 18	\$ 27
6	\$ 3,036,488	85,476	\$ 36	\$ 27
9	\$ 1,074,868	86,479	\$ 12	\$ 27
2	\$ 1,443,200	94,479	\$ 15	\$ 27
1	\$ 980,215	94,688	\$ 10	\$ 27
7	\$ 526,768	95,096	\$ 6	\$ 27
11	\$ 2,077,938	96,534	\$ 22	\$ 27
12	\$ 813,972	117,609	\$ 7	\$ 26
8	\$ 78,288	119,141	\$ 1	\$ 26
10	\$ 2,863,820	127,082	\$ 23	\$ 26
5	\$ 1,636,790	140,684	\$ 12	\$ 26
	LINEST: \$ 25.38	\$ 15	:Median	
	INTERCEPT: \$ 121,687	\$ 22	:Avg. Dev. 147%!	



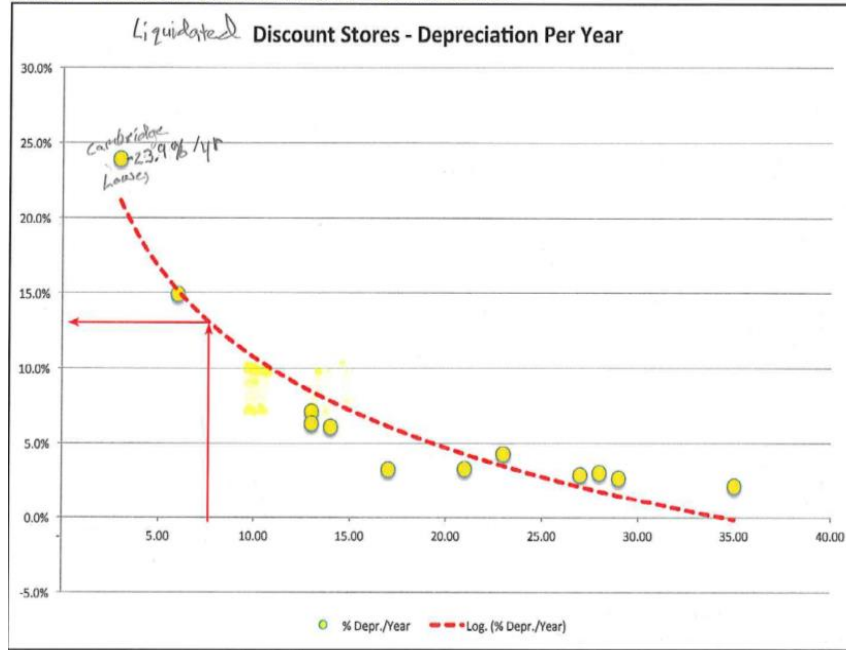
Sale No.	Depr. Value Improvements	Building Sq. Ft.	Bldg/Sq.Ft.	Size Curve
3	\$ 638,466	41,000	\$ 16	\$ 26
4	\$ 1,522,643	83,552	\$ 18	\$ 16
6	\$ 3,036,488	85,476	\$ 36	\$ 15
9	\$ 1,074,868	86,479	\$ 12	\$ 15
2	\$ 1,443,200	94,479	\$ 15	\$ 15
1	\$ 980,215	94,688	\$ 10	\$ 15
7	\$ 526,768	95,096	\$ 6	\$ 15
11	\$ 2,077,938	96,534	\$ 22	\$ 14
12	\$ 913,972	117,609	\$ 8	\$ 13
8	\$ 78,288	119,141	\$ 1	\$ 13
10	\$ 2,863,820	127,082	\$ 23	\$ 12
5	\$ 1,636,790	140,684	\$ 12	\$ 12
	LINEST: \$ 5.89	\$ 14	:Median	
	INTERCEPT: \$ 819,250	\$ 7	:Avg. Dev. 50%!	



# DARK DILEMA, OBSOLESCENCE IN THE COST APPROACH

## Cost Approach

### MVS - PHYSICAL DEPRECIATION / COMMERCIAL



The table starts by taking the sale price and subtracting the land value at time of sale to arrive at the contributory value of the building. This is then compared to the cost new of the building and the difference is total depreciation. Since land does not depreciate, the depreciation is attributed to the improvements. The table below and on the prior

page shows the calculation of total depreciation and the conclusion of significant overall depreciation. In cases where stores are newer, the physical depreciation will be low but the functional and economic obsolescence will be high. For a seven year store, this would mean about 12.5% per year for a total depreciation of 87%

No	Property	A Sale	Total Site Size	B Land Value \$/SF	Total Land Value	Building Sq. Ft.	RCN \$/SF	D Building Cost New	E % Dep.	F Year Built	Year Of Sale	Age At Sale	G % MRS % Dep Physical
1	Marshall, MN	497,020	1.75	\$ 869,785	94,600	\$ 70.00	\$ 6,628,160	1989	2017	28.00	40.0%		
2	Dundas, MN	522,720	2.50	\$ 1,306,800	94,479	\$ 70.00	\$ 6,613,530	1990	2017	27.00	37.0%		
3	Waseca, MN	192,100	2.25	\$ 432,225	41,000	\$ 70.00	\$ 2,870,000	1987	2016	29.00	42.0%		
4	International Falls, MN	270,943	2.50	\$ 677,358	83,552	\$ 75.00	\$ 6,266,400	1981	2016	35.00	57.0%		
5	Blaine, MN	712,642	5.00	\$ 3,563,210	140,684	\$ 80.00	\$ 11,254,720	2002	2016	14.00	13.0%		
6	Roseville, MN	108,108	14.00	\$ 1,513,512	85,476	\$ 80.00	\$ 6,838,080	1999	2016	17.00	18.0%		
7	Collage Grove, MN	430,808	4.00	\$ 1,723,232	95,096	\$ 75.00	\$ 7,132,200	2002	2015	13.00	12.0%		
8	St. Cloud, MN	546,678	4.00	\$ 2,186,712	119,141	\$ 70.00	\$ 8,339,870	1991	2014	23.00	20.0%		
9	Monticello, MN	336,283	4.00	\$ 1,345,132	86,479	\$ 70.00	\$ 6,053,530	2000	2013	13.00	12.0%		
10	Cambridge, MN	534,045	4.00	\$ 2,136,180	127,082	\$ 80.00	\$ 10,166,560	2009	2012	3.00	2.0%		
11	Austin, MN	307,354	3.00	\$ 922,062	96,534	\$ 70.00	\$ 6,757,380	1991	2012	21.00	25.0%		
12	Rogers, MN	571,507	4.00	\$ 2,286,028	117,609	\$ 75.00	\$ 8,820,675	2006	2012	6.00	4.0%		



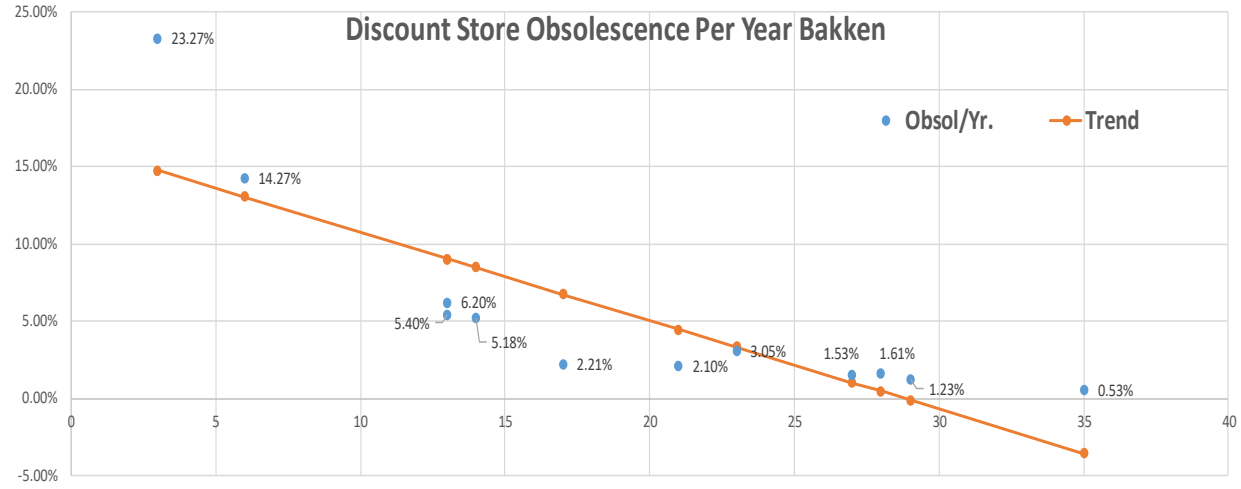
# OBSOLESCENCE CALCULATION IN THE COST APPROACH

Sale No.	DEED RESTRICTION IMPACT PETITIONER		C	D	E	F	B	G	H	I
	Property	A	A X B = C	A-C = D		D + E = F				
	Cost New Improvements	M & S % Physical	RCNLD (M&S) New Impr.	Plus Land Value	RCNLPhysD Sale Price	M & S % Physical	Deed Restr. Sale Price	Deed Restr. Adj. to Sale	Deed Restr. Adj. to RCNLPhysD	
1	Marshall, MN	\$ 6,628,160	\$ 2,651,264	\$ 3,976,896	\$869,785	\$ 4,846,681	40.00%	\$ 1,850,000	162.0%	61.8%
2	Dundas, MN	\$ 6,613,530	\$ 2,447,006	\$ 4,166,524	\$1,306,800	\$ 5,473,324	37.00%	\$ 2,750,000	99.0%	49.8%
3	Waseca, MN	\$ 2,870,000	\$ 1,205,400	\$ 1,664,600	\$432,225	\$ 2,096,825	42.00%	\$ 1,070,691	95.8%	48.9%
4	International Falls, MN	\$ 6,266,400	\$ 3,571,848	\$ 2,694,552	\$677,358	\$ 3,371,910	57.00%	\$ 2,200,000	53.3%	34.8%
5	Blaine, MN	\$ 11,254,720	\$ 1,463,114	\$ 9,791,606	\$3,563,210	\$ 13,354,816	13.00%	\$ 5,200,000	156.8%	61.1%
6	Roseville, MN	\$ 6,838,080	\$ 1,230,854	\$ 5,607,226	\$1,513,512	\$ 7,120,738	18.00%	\$ 4,550,000	56.5%	36.1%
7	Cottage Grove, MN	\$ 7,132,200	\$ 855,864	\$ 6,276,336	\$1,723,232	\$ 7,999,568	12.00%	\$ 2,250,000	255.5%	71.9%
8	St. Cloud, MN	\$ 8,339,870	\$ 2,418,562	\$ 5,921,308	\$2,186,712	\$ 8,108,020	29.00%	\$ 2,265,000	258.0%	72.1%
9	Monticello, MN	\$ 6,053,530	\$ 726,424	\$ 5,327,106	\$1,345,132	\$ 6,672,238	12.00%	\$ 2,420,000	175.7%	63.7%
10	Cambridge, MN	\$ 10,166,560	\$ 203,331	\$ 9,963,229	\$2,136,180	\$ 12,099,409	2.00%	\$ 5,000,000	142.0%	58.7%
11	Austin, MN	\$ 6,757,380	\$ 1,689,345	\$ 5,068,035	\$922,062	\$ 5,990,097	25.00%	\$ 3,000,000	99.7%	49.9%
12	Rogers, MN	\$ 8,820,675	\$ 352,827	\$ 8,467,848	\$2,286,028	\$ 10,753,876	4.00%	\$ 3,200,000	236.1%	70.2%

**Averages:**      \$ 7,311,759    \$ 1,567,987    \$ 5,743,772    \$ 1,580,186    \$ 7,323,958      24.3%    \$ 2,979,641      149.2%      56.6%

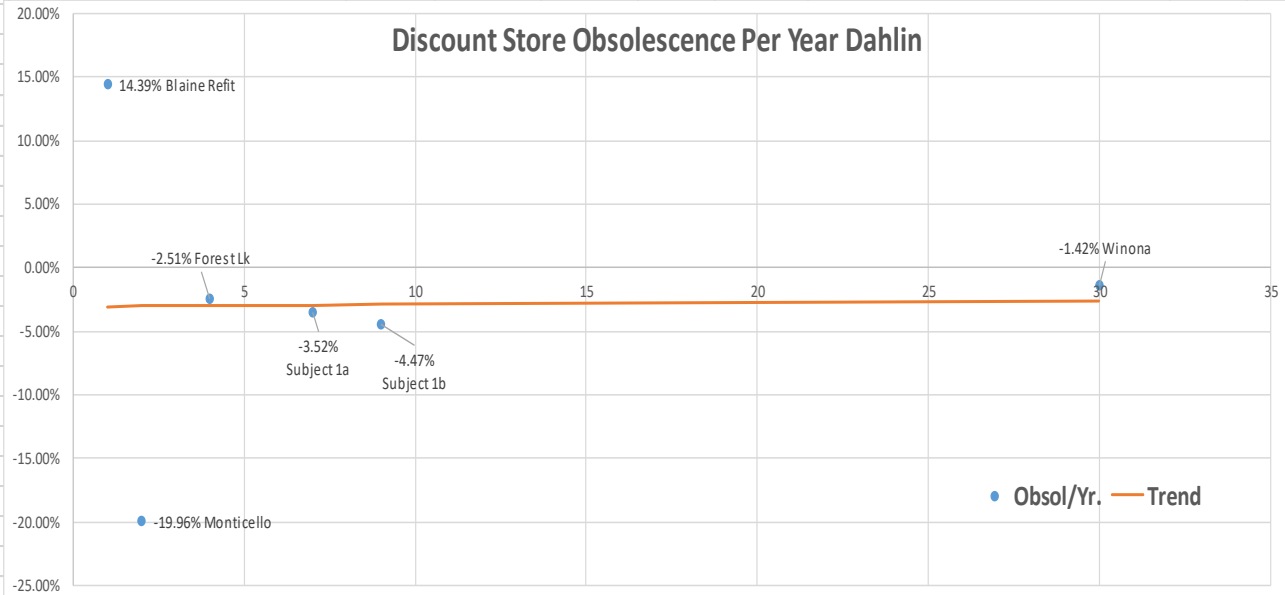
# OBSOLESCENCE %/Yr. CALCULATION IN THE COST APPROACH

Sale No.	%	Age	Obsol/Yr	Trend
9	69.80%	3	23.27%	14.75%
12	85.60%	6	14.27%	13.04%
7	80.60%	13	6.20%	9.03%
9	70.20%	13	5.40%	9.03%
5	72.50%	14	5.18%	8.46%
6	37.60%	17	2.21%	6.74%
11	44.20%	21	2.10%	4.45%
8	70.10%	23	3.05%	3.31%
2	41.20%	27	1.53%	1.02%
1	45.20%	28	1.61%	0.45%
3	35.80%	29	1.23%	-0.13%
4	18.70%	35	0.53%	-3.56%
LINEST:		-0.57%	Median:	5.60%
INTERCEPT:		16.47%	COD:	82.66%



**GRAPH:**

Sale No.	%	Age	Obsol/Yr	Trend
5b	14.39%	1	14.39%	-3.06%
5	-39.91%	2	-19.96%	-3.04%
4	-10.05%	4	-2.51%	-3.01%
Subj. 1a	-24.61%	7	-3.52%	-2.96%
Subj. 1b	-40.23%	9	-4.47%	-2.92%
3	-42.71%	30	-1.42%	-2.57%
2	-83.54%	32	-2.61%	-2.54%
LINEST:		0.02%	Median:	-2.96%
INTERCEPT:		-3.07%	COD:	-6.09%



AGE



**MAAO**  
Minnesota Association  
of Assessing Officers

# Deed Restrictions

- ▶ The problem with attempting to quantify impact of a deed restriction is that you need a successful original user to sell a store where the highest and best use remains the 1<sup>st</sup> generation use, by choice, and not restrict that property when they leave.
- ▶
- ▶ When Rainbow became Lunds, Fresh Thyme, etc. the missing piece was leaving by choice.
- ▶ When Wal Mart left a location to build across the highway, the missing piece was that they left it deed restricted.

# Deed Restrictions

- ▶ Comparing two sales that both are used for new 2<sup>nd</sup> generation uses, one restricted and one unrestricted, does nothing to prove the impact.
- ▶ The unrestricted sale in this scenario has a different highest and best use than the unrestricted 1<sup>st</sup> generation use anyways.
- ▶ You need a location where the store will otherwise be a great candidate for continued first generation use, because it's proven and continues to be a successful location, but can't be going forward due to the restriction.

# Deed Restrictions

## ▶ Required Scenario:

	Sale #1	Sale #2
<b>1st Generation Use</b>	Retail - Home Improvement	Retail - Home Improvement
<b>Current Location Performance</b>	Supports 1st Generation Use	Supports 1st Generation Use
<b>H &amp; B Use</b>	Retail - Home Improvement	Retail - Home Improvement
<b>Scenario</b>	Thriving location is abandoned and sold by choice	Thriving location is abandoned and sold by choice
<b>Deed Restrictions</b>	No	Yes

# Deed Restrictions

- ▶ This scenario doesn't work, because if the 1<sup>st</sup> generation use is restricted, but is no longer the highest and best use anyways, what can you glean from a restriction preventing an obsolete use?:

	Sale #1	Sale #2
1st Generation Use	Retail - Home Improvement	Retail - Home Improvement
Current Location Performance	DOES NOT support 1st generation use	<b>DOES NOT support 1st generation use</b>
H & B Use	Retail - furniture	Retail - Go-Kart track
Scenario	Failing location is abandoned and sold by choice	Failing location is abandoned and sold by choice
Deed Restrictions	No	<b>Yes</b>

# Deed Restrictions

- ▶ This scenario doesn't work, because if the 1<sup>st</sup> generation use is not restricted, but the sale was distressed to begin with, you do not have two arm's length transactions to compare, and adjusting sale #1 for this influence is likely to prove very difficult:

	Sale #1	Sale #2
1st Generation Use	Retail - Home Improvement	Retail - Home Improvement
Current Location Performance	Supports 1st Generation Use	Supports 1st Generation Use
H & B Use	Retail - Home Improvement	Retail - Home Improvement
Scenario	Thriving location is abandoned and sold <b>DUE TO CORPORATE FAILURE</b>	Thriving location is abandoned and sold by choice
Deed Restrictions	<b>No</b>	Yes

# Level of Appraisal Standards (IAAO *section 11.1 in Part 2*)

- ▶ ***“The calculated measures of central tendency are point estimates and provide only an indication, not proof, of whether the level meets the appropriate goal. Confidence intervals and statistical tests should be used....”***





# IAAO Standard

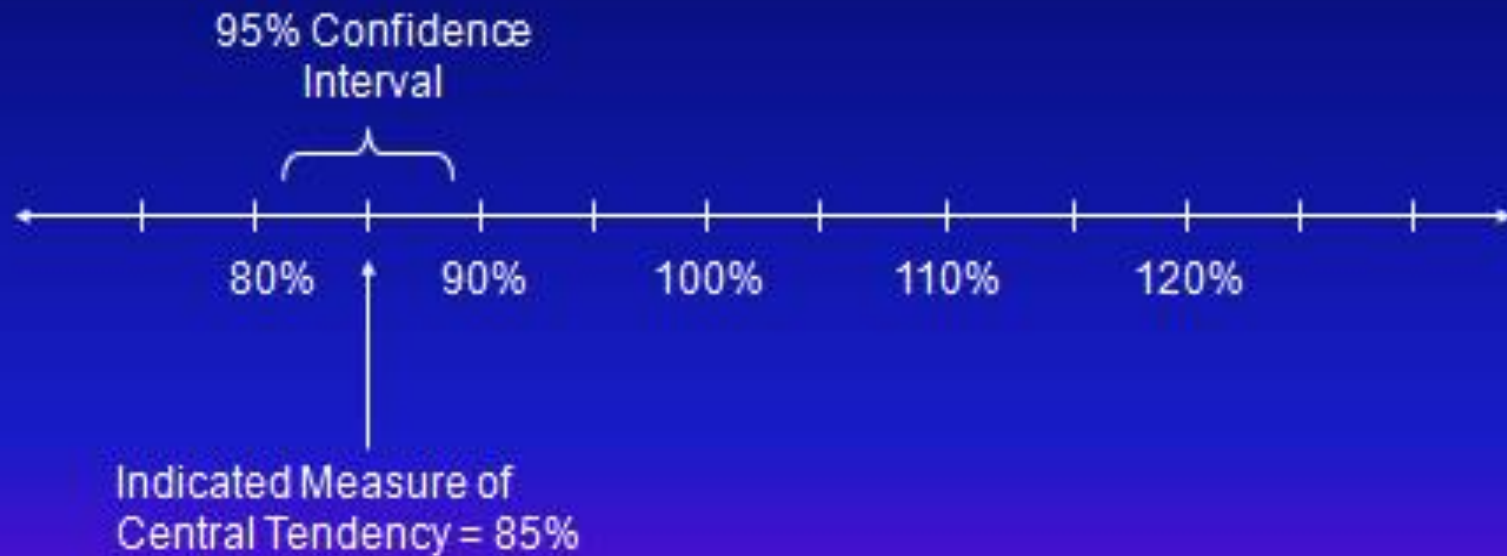
Ratio Study Standards and Decision Making--Using Median 90%-110% Standard

*Example demonstrating application of standard at a 95% level of confidence*

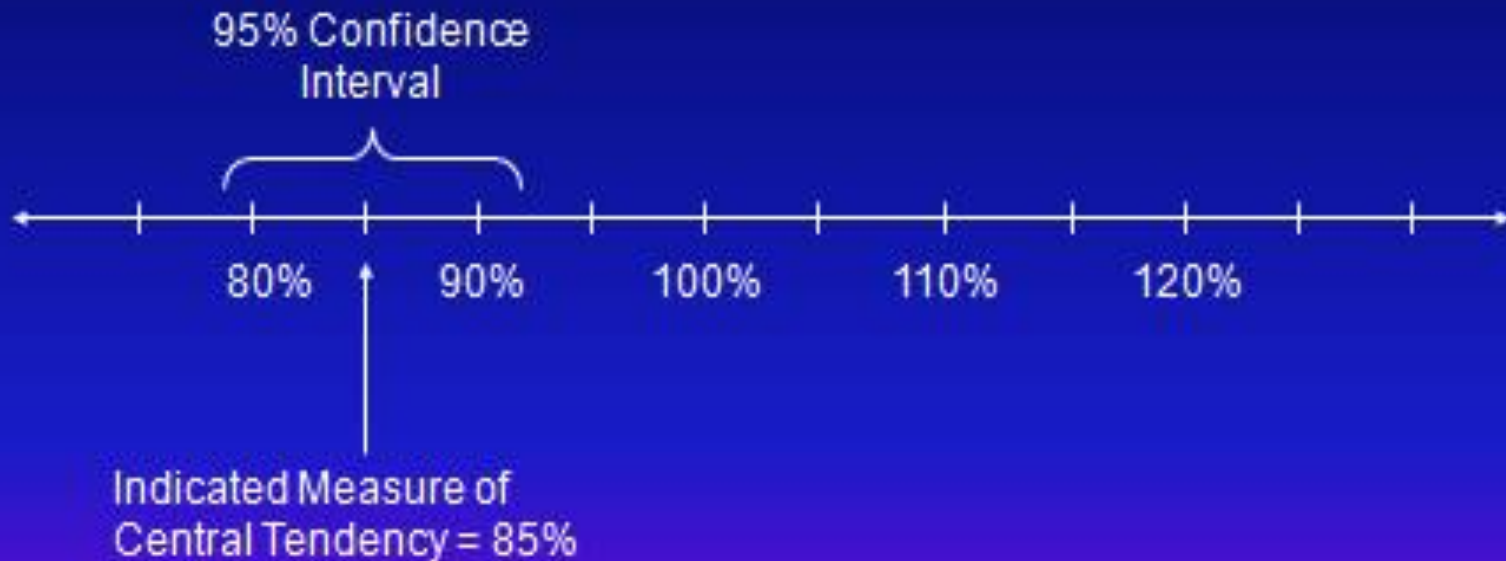
Case	Point Estimate	Confidence Interval (CI) Width	CI Overlaps Preferred Standard Range	Point Estimate in Preferred Standard Range	Equalization Action or Reappraisal Order
1	92%	86% to 101%	yes	yes	no
2	88%	81% to 95%	yes	no	no
3	84%	79% to 88%	no	no	yes



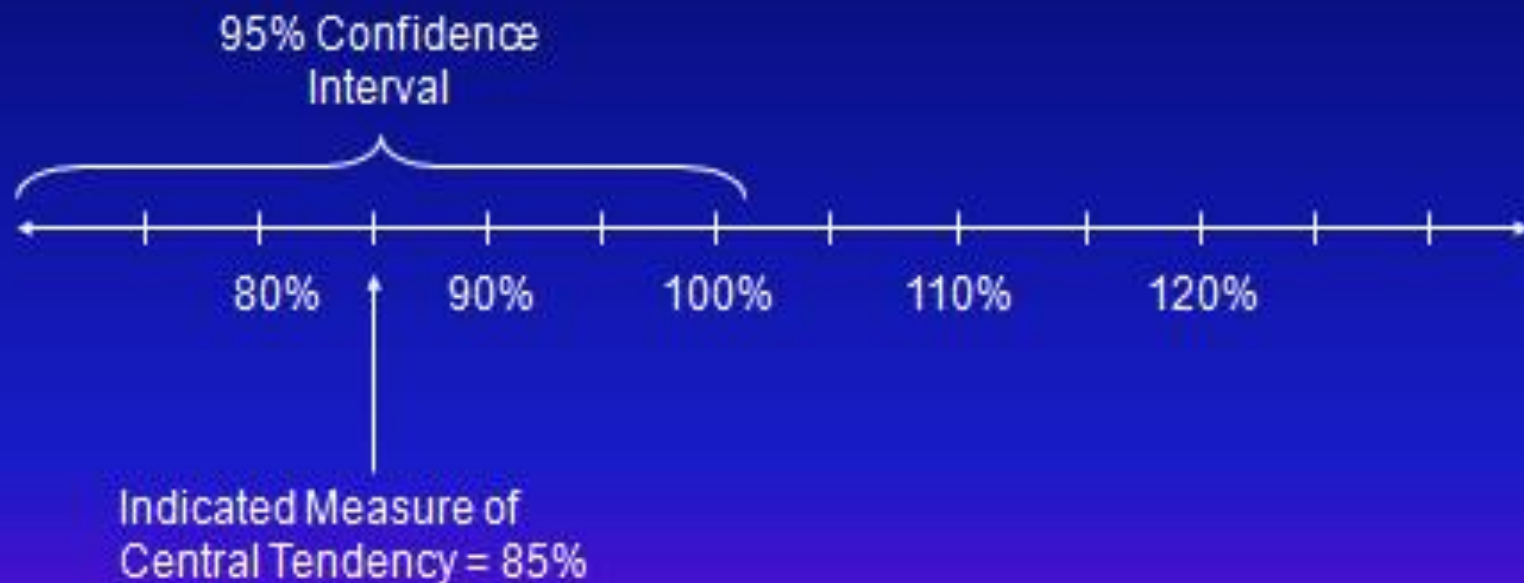
# Confidence Interval Example 1



# Confidence Interval Example 2



# Confidence Interval Example 3



# High Variability and Small Samples

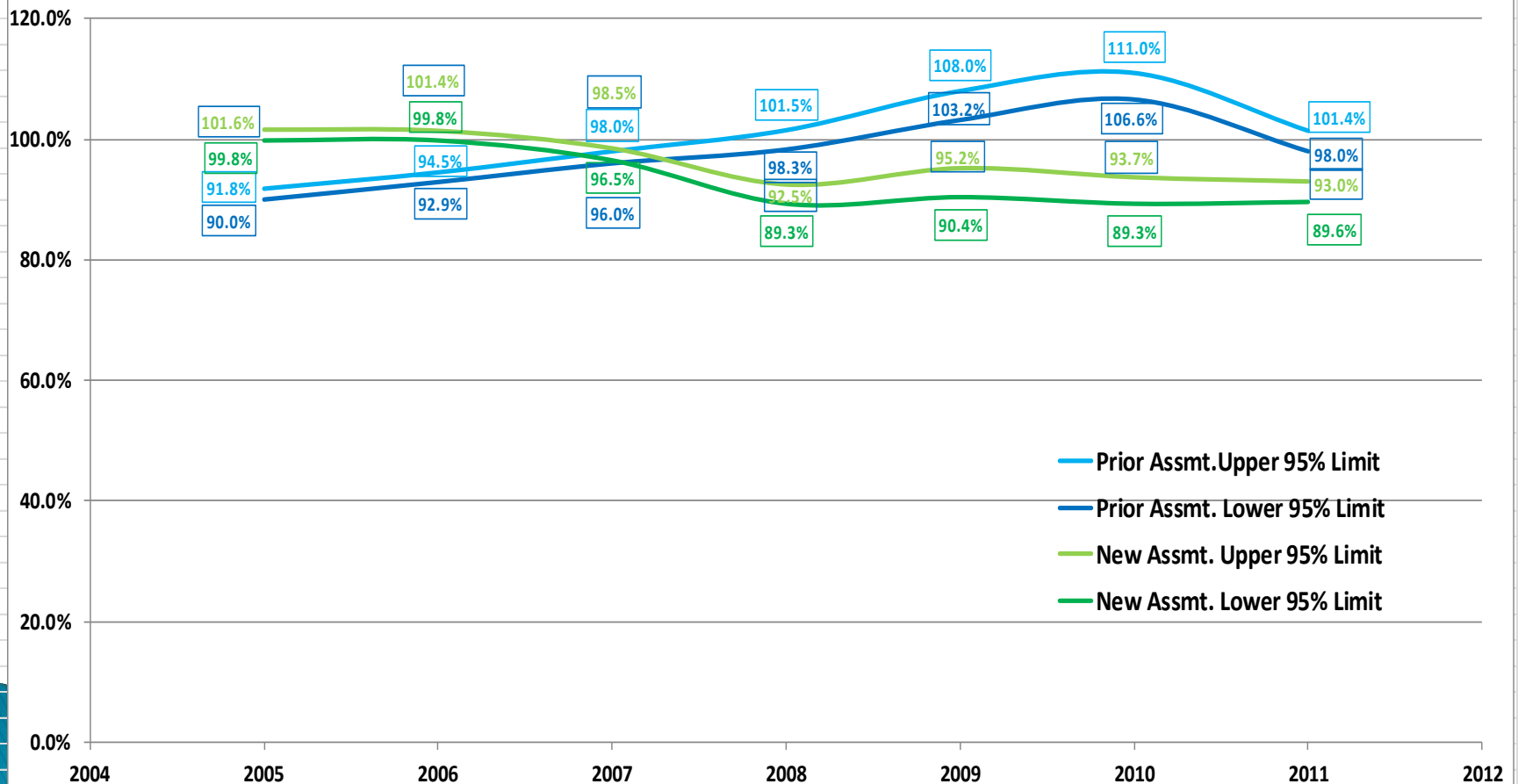
- ▶ Can cause wide confidence intervals
- ▶ Jurisdictions may never subject to equalization, or reappraisal
- ▶ Recommendations:
  - Expand sample sizes
  - Decrease confidence levels (ie: 95% confidence, etc.) by 5% per year if point estimate outside desired range
    - May lower confidence level to 70%
  - Decisions based on point estimates after 5 consecutive years

# CONFIDENCE BEFORE & AFTER EQUALIZATION

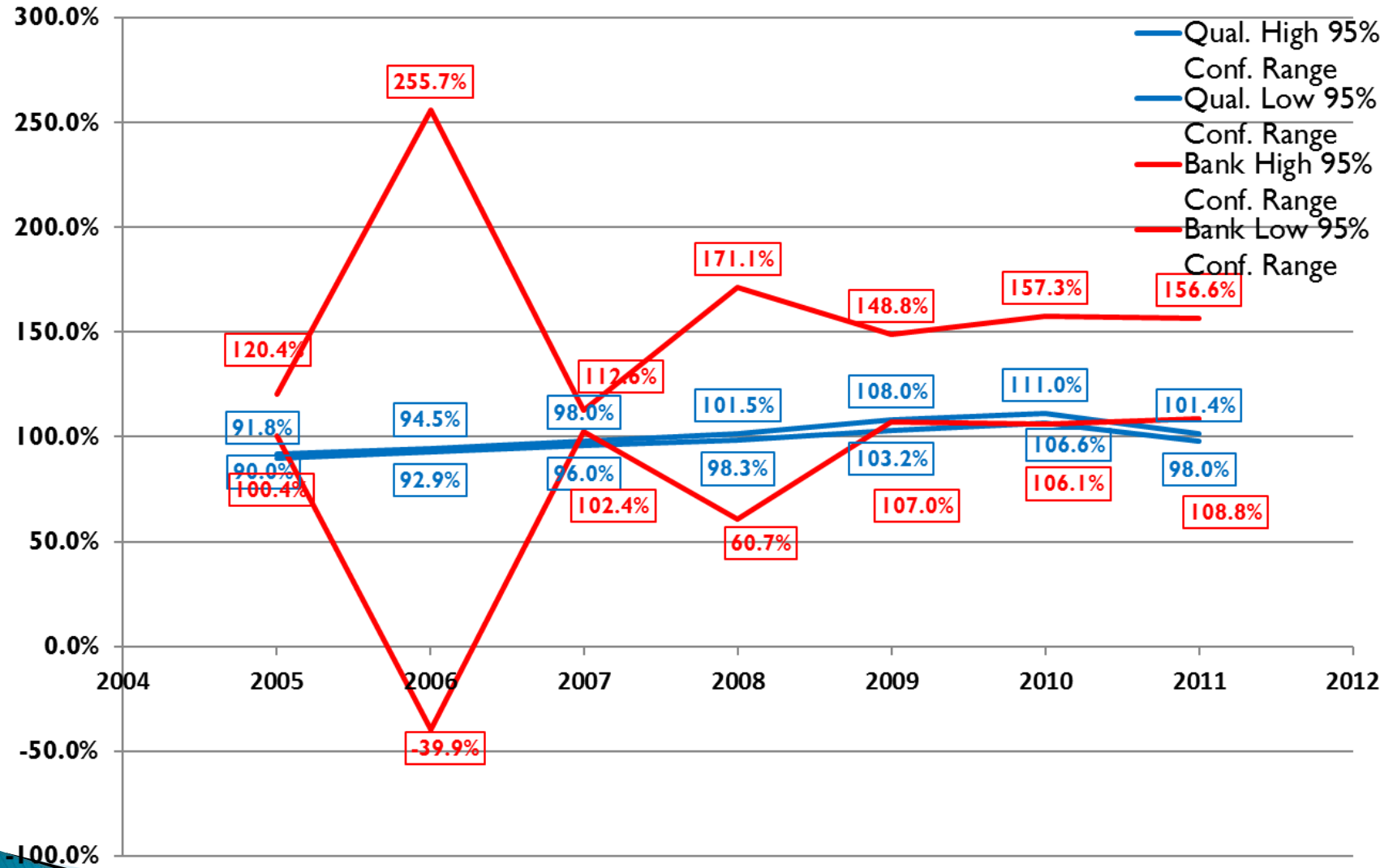
**BEFORE AND AFTER ASSESSMENT CONFIDENCE RANGES FOR QUALIFIED SALES**

Assessment / Sale Year	2005	2006	2007	2008	2009	2010	2011
Prior Assmt. Upper 95% Limit	91.8%	94.5%	98.0%	101.5%	108.0%	111.0%	101.4%
Prior Assmt. Lower 95% Lim	90.0%	92.9%	96.0%	98.3%	103.2%	106.6%	98.0%
New Assmt. Upper 95% Limi	101.6%	101.4%	98.5%	92.5%	95.2%	93.7%	93.0%
New Assmt. Lower 95% Limi	99.8%	99.8%	96.5%	89.3%	90.4%	89.3%	89.6%

**BEFORE AND AFTER ASSESSMENT 95% MEAN CONFIDENCE RANGES FOR QUALIFIED SALES**



# CONFIDENCE COMPARING MARKET SEGMENTS

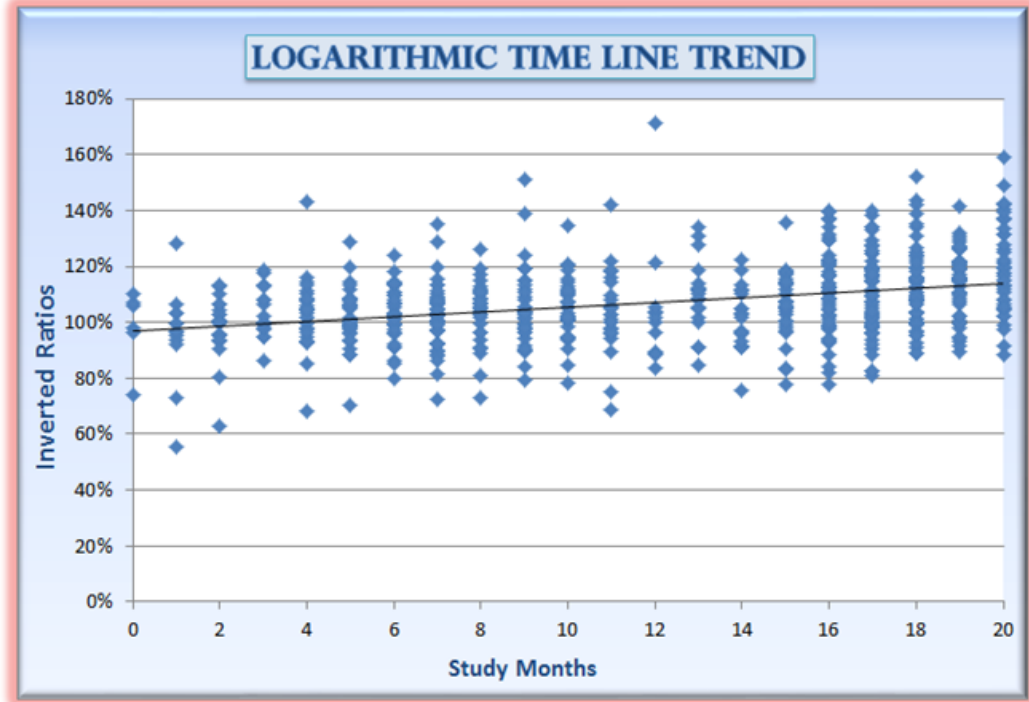


# Confidence of Time Adjustment Calculation

Intercept Year	2012
Sale Count	662
Slope	0.0080
Intercept	0.968
P-Value	0.0%
Significance	100.0%
Monthly Trend	0.80%
Annual Trend	10.0%
Applied Trend	10.0%

The intercept year should be equal to the first year of the study. If it is lower then the sales sample on the Data tab includes sales that are too old. If it is higher then you need to be sure to include all sales from the 21 month study period.

The annual trend is the estimated time trend (regardless of significance). If the significance level is greater than 90% and the total number of sales is greater than or equal to 30, a time trend will be applied and equal to the "applied trend" value above.



- Intercept: 96.8%
- Slope: +0.80
- Significance: 100.0%

If the result is deemed statistically significant (confidence level > 90%) a time adjustment is applied to the corresponding sales. Otherwise sales prices are not adjusted for time.

Define Adjustment Regions  
 • Before October 2010

Counties Submit Sales  
 • October 2011



QUESTIONS

?????