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# Ratio Practices

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Property Tax Division

IOWA  Department of **REVENUE**

# Goals – Property Tax Division

- Provide **education and supervision** so assessments will be uniform, fair and equitable
- **Reduce** the number of **equalization orders**
- **More transparent** assessment process
- Enable spot revaluations and **improve quality of assessments.**

# Action Steps

- Appraisals complete prior to January 1
- Open communications
- Share IDR process
  - Equalization formula
  - Sales condition reviews
  - More current sales list
- Work with assessors prior to equalization
  - Ag factor county by county contact
  - Revaluation counties
  - Develop data - see what needs to be done

# 2009 vs 2007 Equalization

Percent of agricultural jurisdictions within statutory assessment level tolerance. (625-43101-005)

Percent of residential jurisdictions within statutory assessment level tolerance. (625-43101-006)

Percent of commercial jurisdictions within statutory assessment level tolerance. (625-43101-007)

**Agricultural 75%**  
**Actual: 76/107 = 71%**  
**2007 orders = 59**  
**2009 orders = 31**

**Residential 75%**  
**Actual: 94/107 = 88%**  
**2007 orders = 40**  
**2009 orders = 13**

**Commercial 75%**  
**Actual: 87/107 = 81%**  
**2007 orders = 27**  
**2009 orders = 20**

# Equalization

- Odd numbered year for commercial, residential, and agricultural classifications.
- The relevant sections of the Iowa Code and Iowa Administrative Rules are in the index.

# Declarations of Value

- Updated sale's list published in early May

# Residential

- Median ratio (assessment/adjusted sale price)
- 2010 arms-length deed transactions

# 2011 Commercial Equalization Process



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# 2011 Commercial Equalization

- 2011 Commercial Equalization Workbook
- 3 Excel worksheets.
- Click Tabs to open work

# Oldest Sale Selection Worksheet

- The number of sales and appraisals in 2009 and 2010 in each jurisdiction were first considered.
- If (the # of 2009 sales) + (twice the current number of 2010) + (2011 appraisals) = > 50, 2009 and 2010 sales are used.
- If this number < than 50, the 2007 through 2010 sales are used.
- This was further refined by considering reappraisals in each jurisdiction. Sales for years prior to the reappraisal are not used.

# Jurisdictions Median Worksheet

- Summary statistics from the oldest worksheet process
- 2007 and 2008 sale prices adjusted downward for time
- 2007 and 2008 assessments adjusted for 2009 EOs

The ratio is:  $\frac{\text{(order adjusted assessment)}}{\text{(time adjusted sale price)}}$ .

# Time Adjusted Worksheet

Instrument date/year/qtr	Frequency	Median Sales Ratio	Time Adjustment Factor
2007Q1	503	93.6%	97.3%
2007Q2	556	88.3%	91.8%
2007Q3	498	91.4%	95.0%
2007Q4	490	91.9%	95.6%
2008Q1	466	94.1%	97.9%
2008Q2	494	90.8%	94.4%
2008Q3	450	91.8%	95.4%
2008Q4	397	96.2%	1
2009Q1	296	99.7%	1
2009Q2	369	93.6%	1
2009Q3	388	95.3%	1
2009Q4	393	92.5%	1
2010Q1	311	97.2%	1
2010Q2	344	97.2%	1
2010Q3	76	92.5%	1

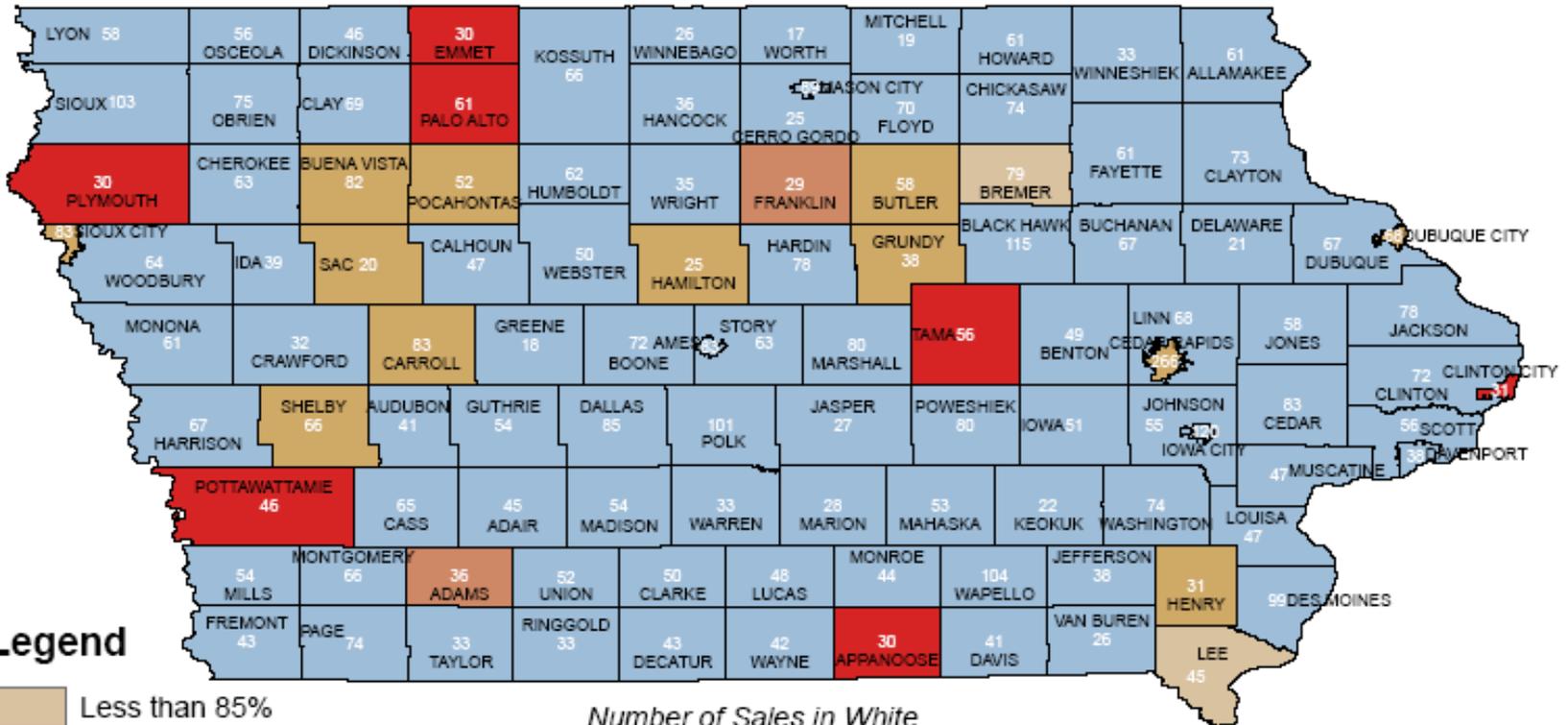
# Assessment Adjustment:

- If 2007 and 2008 sales were used: 2009 equalization adjustments were applied to the assessments.

# Sale to tenant adjustment:

- -10% was applied to the sale price.

# Commercial Sales Medians Normal Deed Sales (Instrument Date of Origin Varies by County) Equalized and Time Adjusted



This map is based on current data as of 4/20/2011.  
The addition of new data will alter map results.

## Commercial Sales Ratio Medians – 4/21/11

	Oldest Year Used		
ADAIR	2007	45	100.2%
ADAMS	2007	36	87.1%
ALLAMAKEE	2007	61	102.9%
APPANOOSE	2010	30	106.7%
AUDUBON	2007	41	96.2%
BENTON	2009	49	103.2%
BLACK HAWK	2009	115	99.9%
BOONE	2007	72	102.9%
BREMER	2007	79	82.7%
BUCHANAN	2007	67	102.1%
BUENA VISTA	2007	82	94.5%
BUTLER	2007	58	94.0%
CALHOUN	2007	47	98.4%

CARROLL	2007	83	91.3%
CASS	2007	65	100.0%
CEDAR	2007	83	97.8%
CERRO GORDO	2010	25	100.9%
CHEROKEE	2007	63	103.5%
CHICKASAW	2007	74	98.7%
CLARKE	2007	50	99.5%
CLAY	2007	69	97.3%
CLAYTON	2007	73	99.3%
CLINTON	2007	72	97.9%
CRAWFORD	2009	32	98.6%
Cerro Gordo - Mason City	2007	89	98.2%

Clinton - City of Clinton	2010	31	106.0%
DALLAS	2007	85	95.8%
DAVIS	2007	41	101.6%
DECATUR	2007	43	95.2%
DELAWARE	2010	21	98.0%
DES MOINES	2007	99	98.6%
DICKINSON	2009	46	97.3%
DUBUQUE	2007	67	97.2%
Dubuque - City of Dubuque	2009	68	92.4%
EMMET	2009	30	109.5%
FAYETTE	2007	61	97.2%
FLOYD	2007	70	97.7%
FRANKLIN	2009	29	87.7%
FREMONT	2007	43	96.1%
GREENE	2009	18	98.3%
GRUNDY	2009	38	91.3%

GUTHRIE	2007	54	95.7%
HAMILTON	2009	25	91.8%
HANCOCK	2009	36	97.9%
HARDIN	2007	78	95.6%
HARRISON	2007	67	97.3%
HENRY	2009	31	92.9%
HOWARD	2007	61	96.5%
HUMBOLDT	2007	62	101.0%
IDA	2007	39	96.1%
IOWA	2007	51	102.6%
JACKSON	2007	78	102.5%
JASPER	2010	27	99.2%
JEFFERSON	2009	38	101.0%

JOHNSON	2009	55	97.1%
JONES	2007	58	95.4%
Johnson - Iowa City	2007	120	96.6%
KEOKUK	2009	22	102.0%
KOSSUTH	2007	66	97.4%
LEE	2009	45	80.9%
LINN	2009	68	101.3%
LOUISA	2007	47	98.3%
LUCAS	2007	48	98.0%
LYON	2007	58	94.9%
Linn - Cedar Rapids	2007	266	94.5%
MADISON	2007	54	100.1%
MAHASKA	2008	53	99.8%
MARION	2009	28	100.4%
MARSHALL	2007	80	98.4%
MILLS	2007	54	98.2%
MITCHELL	2010	19	98.3%
MONONA	2007	61	98.7%

MONROE	2007	44	97.5%
MONTGOMERY	2007	66	100.3%
MUSCATINE	2009	47	97.9%
OBRIEN	2007	75	97.8%
OSCEOLA	2007	56	96.7%
PAGE	2007	74	98.4%
PALO ALTO	2007	61	108.9%
PLYMOUTH	2010	30	106.6%
POCAHONTAS	2007	52	91.8%
POLK	2010	101	104.6%
POTTAWATTAMIE	2009	46	105.5%
POWESHIEK	2007	80	96.3%
RINGGOLD	2007	33	95.5%
SAC	2009	20	93.1%
SCOTT	2009	56	97.4%
SHELBY	2007	66	92.1%

STORY	2007	63	100.7%
Scott - Davenport	2010	38	101.3%
Story - Ames	2007	83	101.7%
TAMA	2007	56	108.6%
TAYLOR	2007	33	96.2%
UNION	2007	52	96.9%
VAN BUREN	2009	26	94.9%
WAPELLO	2007	104	100.7%
WARREN	2009	33	98.5%
WASHINGTON	2007	74	95.9%
WAYNE	2007	42	101.1%

WEBSTER	2009	50	95.3%
WINNEBAGO	2009	26	100.0%
WINNESHIEK	2009	33	98.8%
WOODBURY	2007	64	95.8%
WORTH	2010	17	97.6%
WRIGHT	2009	35	102.6%
Woodbury - Sioux City	2009	83	94.1%

# Ag Equalization

- Early February
  - commitment to productivity numbers
  - enables ag factor implementation
  - fairly large productivity increases
- Alternative orders for ag factor if needed

# DOV Validation: Commercial

An accurate record of sales conditions and state of property for every good sale

- Contact on every potential sale
  - Verify conditions, accurate improvement descriptions
- Important for Revaluation and Equalization
  - Equalization sales may not be Revaluation sales
- May be relevant for years.
- Don't neglect land sales
- Adjust rather than discard.

# DOV Validation: Industrial

- Not used for equalization
  - May be important record for setting values.
- Focus on sales conditions and overall condition of complex property
  - Deferred maintenance

# DOV Valuation - Residential

- Duplicate commercial effort if possible
- Investigate outliers with high and low ratios
- Questionnaires
  - Sales conditions
  - Property condition
- Models require clean sales files
- Comparisons reconcile differences in properties

# DOV Valuation - Agricultural

- Future eDOV: more attention to ag sales.
- Source of land sales for other property classes
- Improve Ag Factor calculations

# IDR's Sale Review

- Assessor and Taxpayer Comments - normal or abnormal
  
- Telephone Verification
  - Commercial Deed Sales, Some Residential
  - Confirm Normal or Abnormal
  - 20% < Sales ratio > 200%
  - Unclear: “Maybe” “Could Be” “Possibly” “I Believe” “?”
  - Commercial: Lending institution seller and property was originally acquired through foreclosure

# No Calls Made

- None for agricultural or industrial sales.
- Contract sales
- Abnormal, vacant lot sales
- Normal residential sales
  - Ratio is within boundaries
  - No information is in question

# Commercial and Residential Sales Questions

- 1) Adjoining property?
- 2) Buyer and seller related?
- 3) Trade or exchange or a 1031 exchange?
- 4) Sales price for real property only?
- 5) Did the buyer rent or lease prior to purchase?
- 6) Forced sale (foreclosure)?

# Who is contacted?

## ■ Phone # on DOV

- Seller, buyer or agent
- Two calls, two days to answer
- Next Party in line – seller, buyer or agent

## ■ Assessor

- For missing data
- Internet research first

## ■ Recorder

- Incomplete fields
- Internet research first

## Standard on Verification of Sales

Condition	IAAO Standard	IDR Default
Sales involving Government	Only if analysis indicates gov. sales have impacted market	Not normal
Sales to Charitable, Religious, etc.	Generally not representative of market.	Not normal
Sales Involving Financial Institution as Buyer	Not if in lieu of foreclosure, sale out of foreclosure ok if more than 20% of market.	Not normal if a it is a foreclosure or a sale out of foreclosure.
Sales between relatives or Corporate affiliates	No unless meets criteria of market value transaction	Not normal
Sales settling an estate	Sale by executor or trustee under power of will may not be normal	Not normal if court officer's deed, sales by heirs normal.
<b>Forced Sales from Judicial Order</b>	<b>Should not be considered</b>	<b>Not normal</b>
Sales of doubtful title	Probably not	Not normal but let's not let tail wag the dog.
Trades	Not generally	Not normal

## Standard on Verification of Sales

Condition	IAAO Standard	IDR Default
Partial Interest	Not generally	Not normal
Land contracts	No unless adjusted for financing	Not normal,
Incomplete of Unbuilt common	Not generally	Not normal
<b>Auction sales</b>	<b>No for absolute auctions unless well attended &amp; min. bid</b>	<b>Normal except closed bids and internet sales</b>
<b>Divestments by large property owners</b>	<b>Typically should not when it involves multiple parcels</b>	<b>Normal</b>
<b>Multi-parcel</b>	<b>Not multiple economic units</b>	<b>Normal</b>
1031 Exchange	Normal Generally	Normal
<b>Adjoining Property Owner</b>	<b>If researched supports</b>	<b>Not normal</b>

## Standard on Verification of Sales

Condition	IAAO Standard	IDR Default
Leasebacks	Not normal generally	Not normal
Property Characteristics Change After Appraisal Date Before Sale date.	Not normal if significant improvements made	Not normal if significant improvements made. (20%)
<b>Property Change in Use</b>	<b>Not used but may be good for analysis</b>	<b>Not normal if class change follows.</b>
Sales with High or Low Ratios	Normal	Normal
<b>Short Sales</b>	<b>Not normal unless greater than 20% of market.</b>	<b>Normal</b>
Long Term Leases	Normal if adjust	Normal
<b>Adjustments</b>	<b>Terms generally if paid by buyer + financing adj.</b>	<b>No adjustment, points have been high at times.</b>
Time adjustment	Based on market analysis	Based on market analysis
Repair analysis	If allowance made and full sale price declared.	If allowance made and full sale price declared.

# Ratio Studies

## Direct Equalization

- Sales & Appraisals
  - Commercial both sales and appraisals
    - fewer appraisers
  - Stratification could be desirable for commercial
    - need property characteristics.
  - Residential deed sales only
    - IDR may consider prior year sales

# Ratio Studies

## Direct Equalization

- Sales Chasing
  - Skews statistics - IDR studies ratios by quarter
  - Prior year assessment in study - use sale that has been pegged
  
- Sales Sampling
  - IDR uses all good sales
  - Appraisals used to add to the sample size
  - High value properties analyzed separately: would require rule, perhaps code changes.

# Verification of Adjustments

Personal property not declared  
or not declared correctly on DOV

- Detail Dollar Amount: Buyer and Seller Signed Agreement
- HUD-1 Settlement Statement.
  - For federal loan guarantee on the secondary market
  - Loan must meet certain criteria
  - **Part J, line 102 and Part K, line 402** - asks for the “Personal Property” for both Borrower and Seller
  - **Check lines 1303 through 1305** for Settlement Charges that might qualify as personal property items.
  - **Line 303** should be the same amount as the mortgage.

# Statistical Measures

- Measure of appraisal level
  - Median ratio key number for equalization formula
- Vertical Inequities
  - PRD published
  - Can be considered in reappraisal order
- Sample Size – Excel
  - Prior year sales if necessary
  - Adjust sale price for time
  - Adjust assessment for equalization orders
- Horizontal Equity
  - COD and COV
  - Reappraisal orders issued on high CODs and PRD
  - Time since the last reappraisal

# Sample Size

The **inverse** of the **normal cumulative distribution** for the individual mean and standard deviation of a data array with a **relative error of 10%**, **a target value of 95%**:

$$\frac{\text{NORMINV}(10\%/2,0,1)^2}{10\%^2 * 0.21 * (1 - 0.21)} = 45$$

# Sample Size

This normal distribution number is

**compared to the unit size  
of individual jurisdiction**

to arrive at an estimated minimum sample size:

$$45/(1 + 45/\text{number of units})$$

Units	Normal Sales	All Sales	Mean	Standard Deviation	NORMINV	Min Sample
219	3	29	0.7858833	0.334521758	45	37

# Confidence Intervals Around Median

**Number of ratios up and down from the median**

to find the confidence level =

**(t value of sample size -1)**

**X (square root of # of samples -1)**

**2**

't	n - 1	Sq Rt	't*Sq Rt	Half	Median	Lower	Upper
2.02	44	6.63	13.4	6.7	80.9	70.4	97.8
1.96	264	16.25	31.85	15.92	94.3	90.7	98.5

# Commercial Equalization Wizard

2010 NET ASSESSMENT		2011 NET ASSESSMENT	
2010 Gross Value	<u>163,257,330</u>	2011 Gross Value	<u>158,759,460</u>
2011 Deletions From Value		2011 Additions To Value	
Excluding Revaluation	<u>7,567,010</u>	Excluding Revaluation	<u>2,851,210</u>
<b>2010 Net Assessment</b>	<u>155,690,320</u>	<b>2011 Net Assessment</b>	<u>155,908,250</u>
	2007 Net Revaluation	<u>217,930</u>	

# Commercial Equalization Wizard

2010 Units      892      Sales      31  
 Appraisals      12      Sample Size      4.82%

A. 2010 Net Assessment	B. Median Ratio	C. 2011 Equalized Value (A/B)	D. 2011 Net Assessment	E. Equalization Order (C / D - 1)	F. 2011 Assessor Revaluation %
155,690,320	94.90	164,057,239	<b>155,908,250</b>	5.2268%	0.14%  Is it in compliance

**-5% (C \*.95) > 155,854,377 <+5% C\*1.05 172,260,101      YES >=-5%**  
**YES <=+5%**

# Contact Information

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