Summary Report

Is there a difference in market value of housing units for the periods 2005, 2007, 2009, 2011, and 2013?
There is a statistical significance for years 2005 and 2011. For years 2005 and 2011, the market value for the occupied housing units was greater than for the market value for vacant housing units.

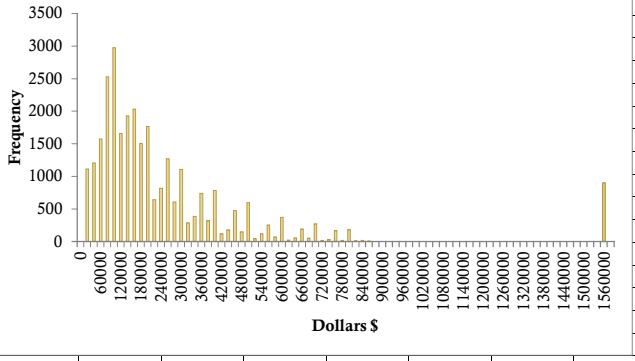
Do the differences have a pattern over the time period given?
The trend seems to be for 2005 and 2011 a higher average market value for occupied housing units than vacant housing units. For 2007, 2009, and 2013 the average market value for occupied and vacant housing units are about equal.

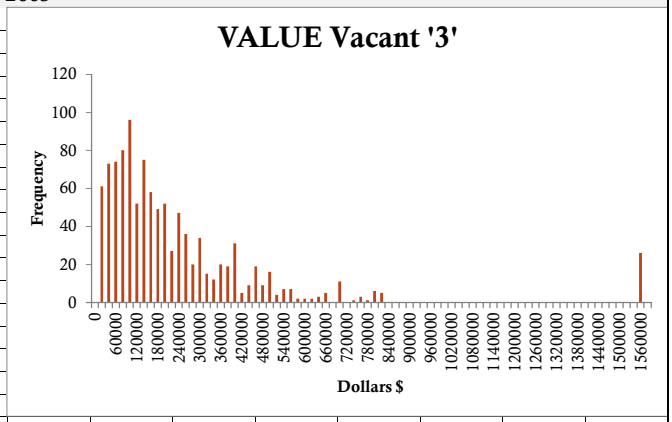
Descriptive Statistics
Market Value of Occupied vs Vacant Housing Units

	Occupied Housing Units ('1')						Vacant Housing Units ('3')					
	2005	*2007*	*2009*	*2011*	*2013*			*2005*	*2007*	*2009*	*2011*	*2013*
Mean	247130.8466	278960.7533	247681.9663	258136.2211	249858.5465		**Mean**	229324.3594	289004.4928	249230.0607	222116.855	251996.8178
Standard Error	1642.721687	1949.56645	1577.650565	1050.644519	1499.97655		**Standard Error**	8067.007619	8431.176942	9048.176411	5802.637262	10990.32368
Median	160000	190000	179000	177000	180000		**Median**	150000	200000	165000	144450	150000
Mode	200000	200000	200000	200000	150000		**Mode**	1540794	1829479	200000	200000	150000
Standard Deviation	281859.6405	317162.7659	273625.7419	301001.8618	282290.6451		**Standard Deviation**	264371.4834	306203.818	318104.853	316336.8786	389653.0876
Sample Variance	79444856915	1.00592E+11	74871046642	90602120816	79688008338		**Sample Variance**	69892281216	93760778164	1.01191E+11	1.00069E+11	1.5183E+11
Kurtosis	11.02424529	12.86411398	31.88616457	52.89559501	33.43670103		**Kurtosis**	12.37474982	13.09387441	26.91874803	41.28221051	23.01107322
Skewness	3.090205632	3.285310639	4.667869315	5.4596834	4.84535521		**Skewness**	3.165239742	3.217984913	4.538695664	5.428402134	4.526607886
Range	1539794	1828479	2464647	5263699	2510000		**Range**	1539594	1828479	2464647	4413135	2510000
Minimum	1000	1000	1000	1000	10000		**Minimum**	1200	1000	1000	1000	10000
Maximum	1540794	1829479	2465647	5264699	2520000		**Maximum**	1540794	1829479	2465647	4414135	2520000
Sum	7275532125	7382975298	7450521228	21187304757	8849490000		**Sum**	246294362	381196926	308048355	660131293	316760000
Count	29440	26466	30081	82078	35418		**Count**	1074	1319	1236	2972	1257

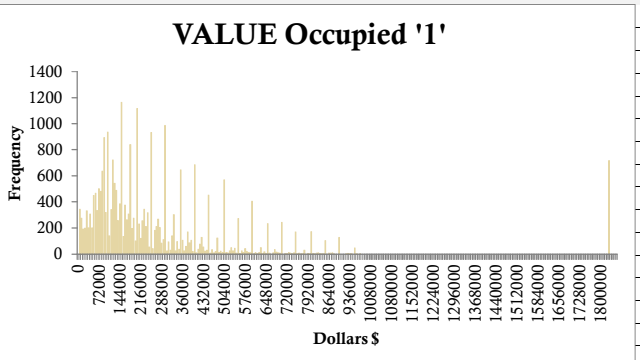
Graphs
Distribution of VALUE variable across various years and STATUS categories

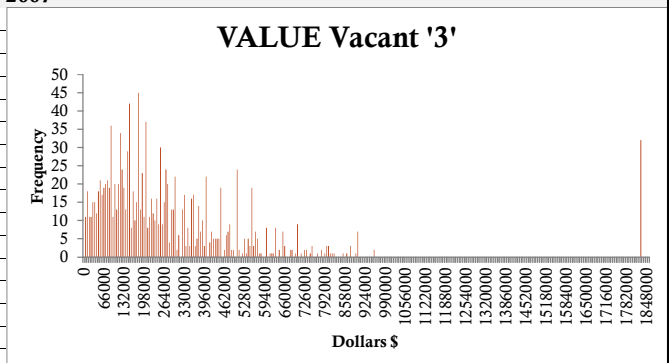
Year 2005



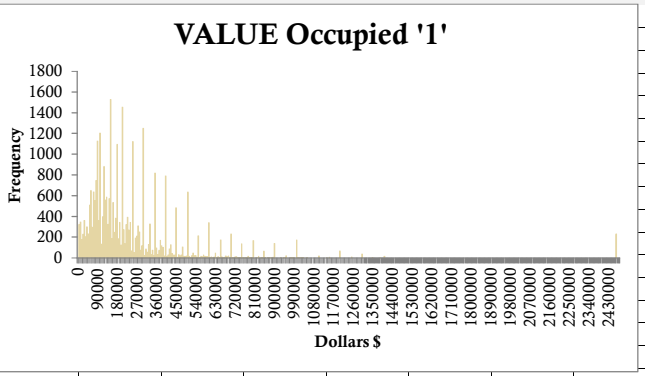


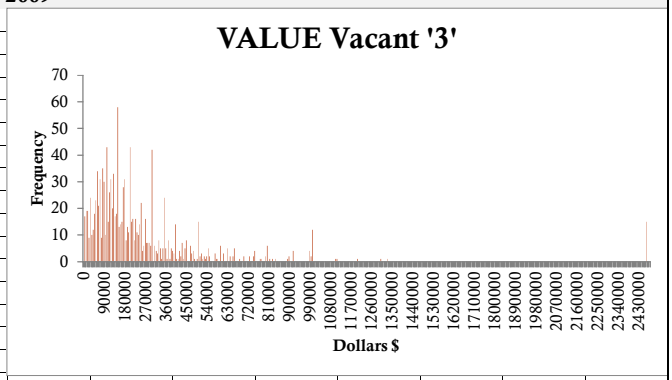
Year 2007



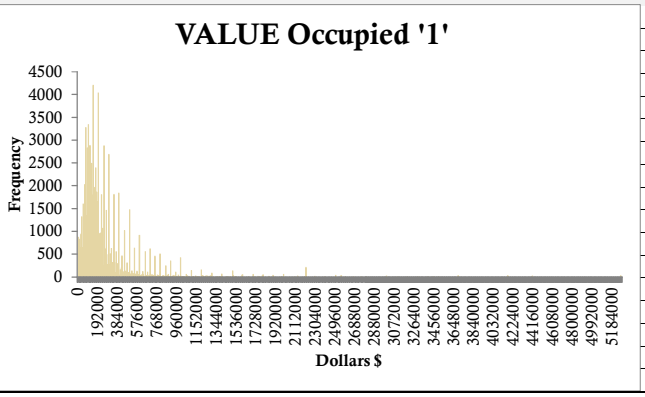


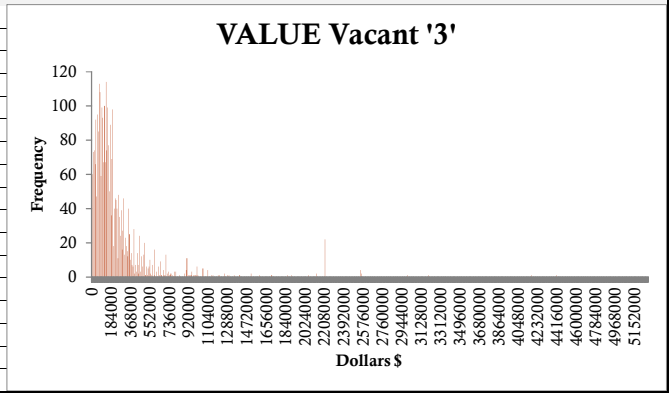
Year 2009

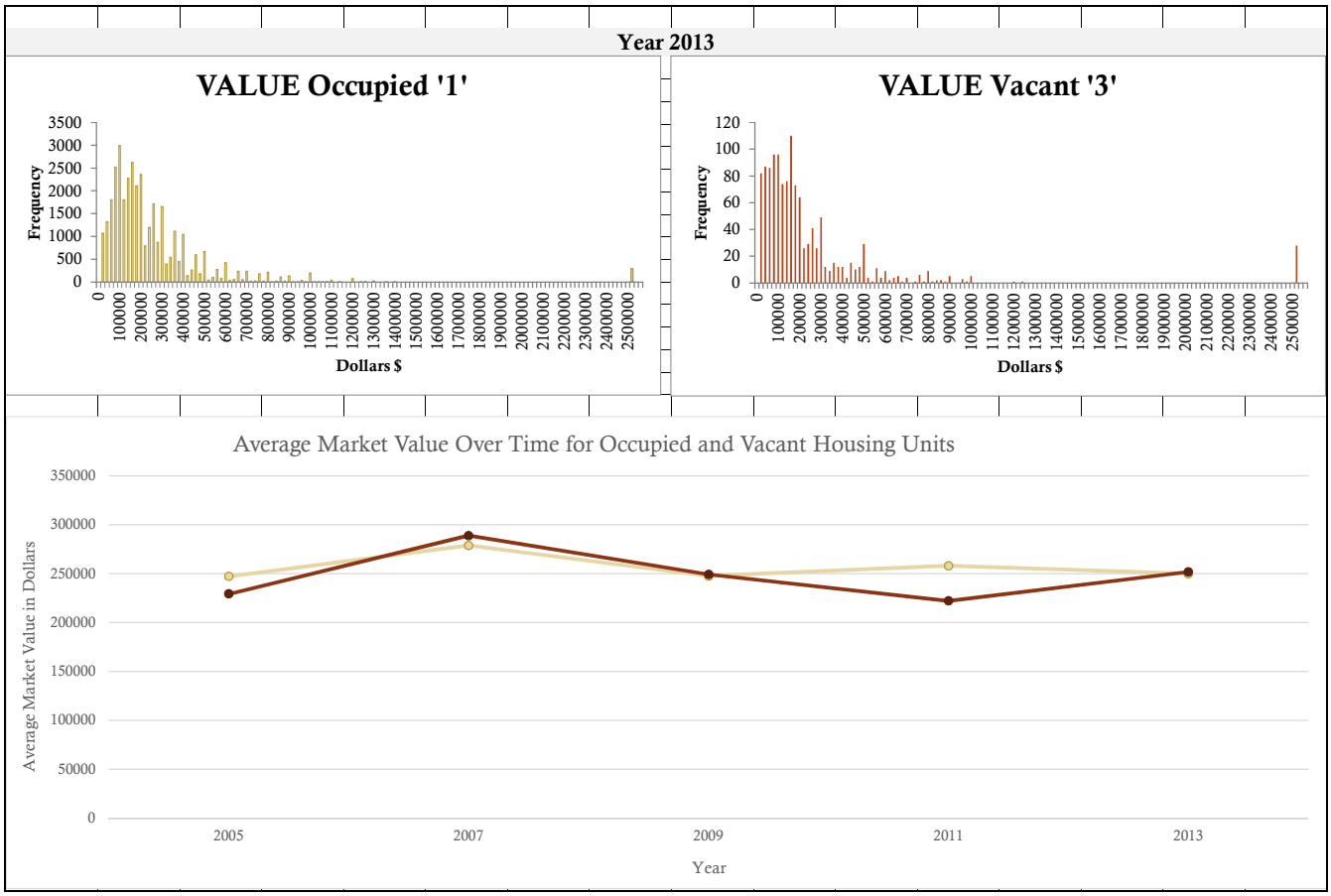




Year 2011






Year 2013
VALUE Occupied '1'
Frequency
Dollars $
VALUE Vacant '3'
Frequency
Dollars $
Average Market Value Over Time for Occupied and Vacant Housing Units
Average Market Value in Dollars
Year
2005
2007
2009
2011
2013

Statistical Tests
t-Test for difference in means was performed; specifically test with unequal variance

Year 2005

t-Test: Two-Sample Assuming Unequal Variances

	VALUE Occupied '1'	*VALUE Vacant '3'*
Mean	247130.8466	229324.3594
Variance	79444856915	69892281216
Observations	29440	1074
Hypothesized Mean Difference	0	
df	1164	
t Stat	2.162932768	
P(T<=t) one-tail	0.015374714	
t Critical one-tail	1.646163756	
P(T<=t) two-tail	0.030749428	
t Critical two-tail	1.962004103	

H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} = 0$ **Reject**
H_A: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} \neq 0$ **Not**

conclusion: t-stat falls inside rejection region, reject the null hypothesis

Year 2007

t-Test: Two-Sample Assuming Unequal Variances

	VALUE Occupied '1'	*VALUE Vacant '3'*
Mean	278960.7533	289004.4928
Variance	1.00592E+11	93760778164
Observations	26466	1319
Hypothesized Mean Difference	0	
df	1463	
t Stat	-1.160637009	
P(T<=t) one-tail	0.122989449	
t Critical one-tail	1.645895828	
P(T<=t) two-tail	0.245978899	
t Critical two-tail	1.961586815	

H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} = 0$ **Not Reject**
H_A: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} \neq 0$ **Reject**

Conclusion: t-stat does not fall within rejection region; do no reject the null hypothesis

Year 2009

t-Test: Two-Sample Assuming Unequal Variances

	VALUE Occupied '1'	*VALUE vacant '3'*
Mean	247681.9663	249230.0607
Variance	74871046642	1.01191E+11
Observations	30081	1236

Hypothesized Mean Difference	0		
df	1311		
t Stat	-0.168551674		
P(T<=t) one-tail	0.433087647		
t Critical one-tail	1.646016749		
P(T<=t) two-tail	0.866175295		
t Critical two-tail	1.961775141		

H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} = 0$ Not Reject

conclusion: t-stat is outside of critical region, do not reject null hypothesis

Year 2011

t-Test: Two-Sample Assuming Unequal Variances

	VALUE Occupied '1'	*VALUE Vacant '3'*
Mean	258136.2211	222116.855
Variance	90602120816	1.00069E+11
Observations	82078	2972
Hypothesized Mean Difference	0	
df	3169	
t Stat	6.108096809	
P(T<=t) one-tail	5.65426E-10	
t Critical one-tail	1.645334604	
P(T<=t) two-tail	1.13085E-09	
t Critical two-tail	1.960712852	

H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} = 0$ Reject
H_A: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} \neq 0$ Not

conclusion: t-stat falls inside critical region, reject the null hypothesis

Year 2013

t-Test: Two-Sample Assuming Unequal Variances

	VALUE (Occupied '1')	*VALUE (Vacant '3')*
Mean	249858.5465	251996.8178
Variance	79688008338	1.5183E+11
Observations	35418	1257
Hypothesized Mean Difference	0	
df	1303	
t Stat	-0.192772327	
P(T<=t) one-tail	0.423583659	
t Critical one-tail	1.646023895	
P(T<=t) two-tail	0.847167318	
t Critical two-tail	1.961786271	

H_0: $\mu_{Occupied} - \mu_{Not\text{-}Occupied} = 0$ Not Reject

conclusion: t-stat does not fall within critical region; do not reject the null hypothesis