

Property taxes: Are owners getting their money's worth?

Travis L. Jones
Florida Gulf Coast University

H. Shelton Weeks
Florida Gulf Coast University

William J. Ritchie
James Madison University

ABSTRACT

The purpose of this case is to demonstrate the impact of special assessments on real property values. This case also provides an opportunity for the instructor to review the proper use of special assessments by communities and the impact that these assessments can have on the marketability of properties. In this case, students are asked to examine real world data to determine the impact of special assessments on property values. The case setting immediately follows four years of accelerated growth, in both market values and taxes, on vacant lots in Cape Coral, Florida, for the period 2003 to 2006. The findings of the case indicate the impacts of special assessments on real property values are significant and should be carefully considered when municipalities attempt to balance the cost and benefits of projects using this contentious funding source. Policy makers must consider the property value implication of using special assessments to fund projects as their use may have significant negative consequences for property owners.

Keywords: property tax, market valuation, real estate finance

INTRODUCTION

The city of Cape Coral, FL was developed in the 1950's by two land speculators, the Rosen brothers, who planned to capitalize on the area's Gulf Coast location and tropical climate by developing a city that would feature an unusually high number of buildable waterfront lots. After the brothers purchased the property, the community was platted and developed. This process resulted in the creation of over 350,000 residential lots and approximately 400 miles of canals (see Cape Coral History). Exhibit 1 provides a map of the city that shows the numerous canals that run throughout the city and the extent of waterfront lots available.

The city is the 2nd largest city in the state of Florida, by landmass, with a total area of approximately 115 square miles. The city's population of 154,000 makes it the state's 11th largest city in population (see State of Florida.com). Initially, most of the residential lots in Cape Coral were sold to out-of-state investors. As a result, many of the lots remain vacant today (see Cape Coral History).

During the late 1990's, the population of Cape Coral underwent a rapid expansion, growing by more than 100% in a 10-year period. Predictably, during this time, the city struggled to keep up with the increased demand for extension of key infrastructure services to areas within the city that had not been previously built out. In particular, the demand for expanded utilities services was very strong. In response to this demand, special assessments were used to fund the extension of services into areas of the city that were experiencing rapid build out. These special assessments ranged from several hundred dollars to over \$10,000 per lot. Given the size of the special assessments and the variation across lots, city officials and many landowners questioned the relationship between the extension of utilities services and land value (see Liberatore, 2009 a,b,c).

SPECIAL ASSESSMENTS

Unlike ad valorem taxes, which are levied to pay for services that benefit a community as a whole, special assessments are used to finance improvements that benefit a particular parcel or number of parcels. The costs of improvements are divided on a pro rata basis to determine the special assessment for each parcel. For example, the extension of sewer services to 20 comparable residential lots located in a particular area would result in a special assessment for each lot of approximately 5% of the total costs of the project. Since special assessments are levied only against the owners of properties that benefit directly from the construction of the improvements, they provide an increasingly popular method for financing capital improvements.

While special assessments are intended to cover cost of capital improvements, which will provide benefits to a specific parcel or group of parcels, there is no guarantee that these benefits will result in an increase in market value equal to their costs. In theory, the decision to proceed with a project and use a special assessment to finance the improvements is based on the assumption that the benefit will exceed the cost (see Chapter 8, Government Controls and Real Estate Markets, of Ling and Arthur, 2008), for more information on special assessments. The *Appraisal of Real Estate* (2001) provides the following comment on special assessments:

“Sometimes the level of special assessments in a location can become so heavy that the marketability of property is seriously affected. The benefits resulting from these assessments may not enhance the sale prices that can be obtained for

properties in proportion to their costs; nevertheless, the cost must be offset. As a rule, properties that are subject to special assessments can be expected to bring lower sale prices than comparable properties that are not subject to these taxes.”

Based on the statement above, the situation in Cape Coral provides an excellent opportunity to examine how special assessments impact the market value of residential lots.

DATA

A search of public records from the Lee County Property Appraiser resulted in the formation of a data set consisting of 93 sales of vacant lots with utilities and 346 transactions involving lots without utilities. These transactions took place between January 2003 and May of 2006. The market activity declined significantly during 2006 with only 13 transactions involving vacant lots identified. Of the lots with utilities, 43 had unpaid assessments at the time of sale.

CASE REQUIREMENTS

This case places, you, the student, in the role of the real estate appraiser with the assignment of analyzing the impact of special assessments on the market prices of vacant lots in Cape Coral, FL, during the period under consideration. In order to complete the assignment, you should examine the average price of lots with and without utilities during each year, examine the difference in the means of the two groups for each year to determine if the differences were significant, and construct scatter plots of each subset of data for each year with a line of best fit for each of the two groups.

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CASE-RELATED QUESTIONS

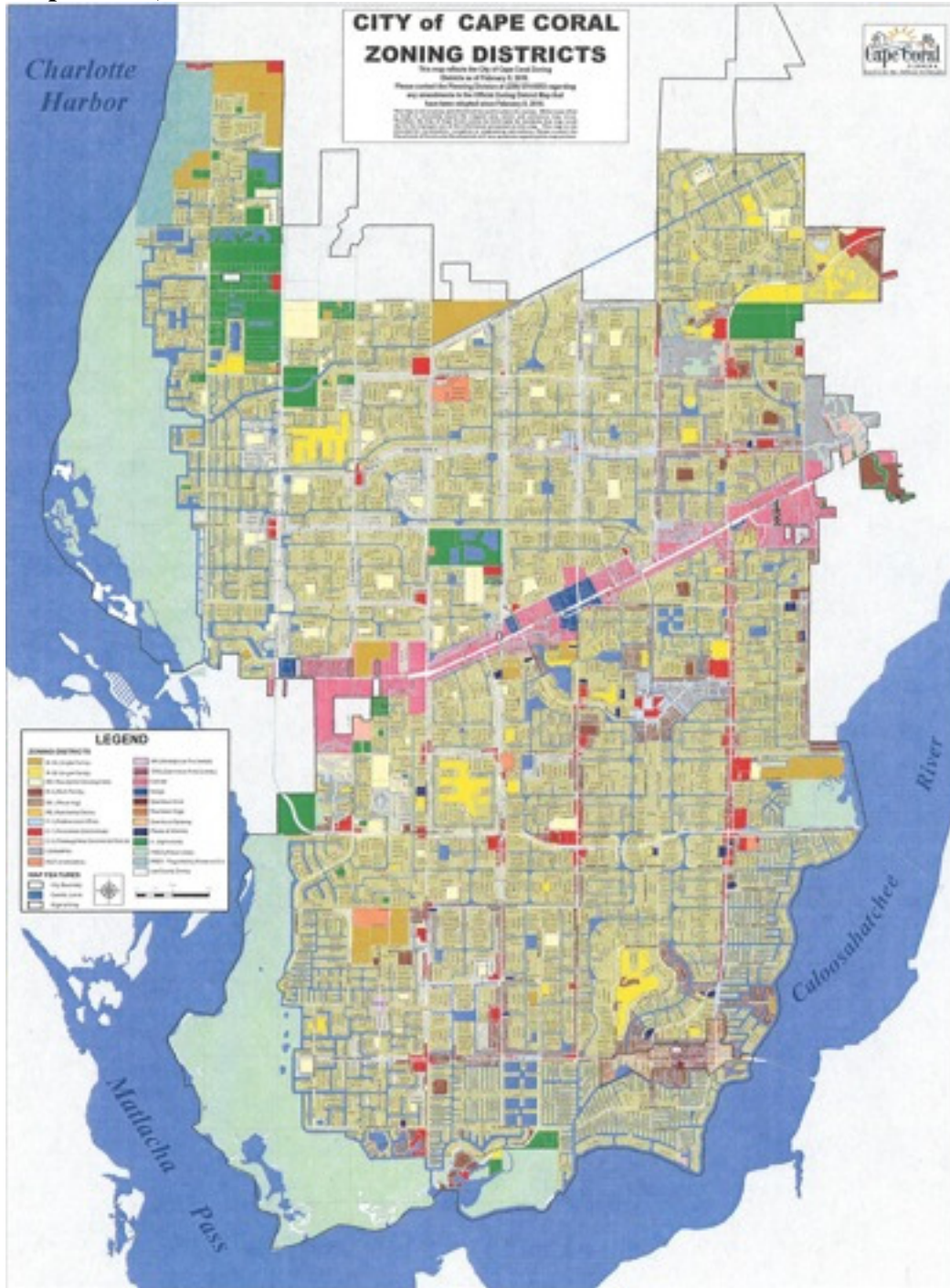
Based on your analysis above, answer the following questions:

1. Did the mean sales prices of lots with utilities exceed the prices of lots without utilities?
2. Are the special assessments justified based on the mean differences in lot prices?

3. What impact would you expect the unpaid assessments to have on the sales prices of the lots with utilities?
4. Adjust the sales prices of the lots with unpaid assessments to more accurately reflect the price the buyer is paying for the property. Re-examine the sales prices as outlined in the case requirements using the adjusted sales prices. How does this impact your analysis?
5. What if any other data could have been used to strengthen the analysis?
6. Is the data sufficient to draw conclusions about the value of the improvements as reflected by the 2006 transactions?
7. How is the efficiency of the market, or lack thereof, demonstrated in the observed prices?



EXHIBIT 1
Map of Cape Coral, FL



Source: <http://www.capecoral.net/Portals/0/docs/DCD/Zoning%20Map.pdf>

CASE TEACHING NOTES**Answers to Case Requirements**

(This information, along with the raw data, is included in the spreadsheet for the case.)

Difference in Means Test Results: t-Test: Two-Sample Assuming Unequal Variances

2003

Unadjusted, with Utilities

	<i>w/ Utilities</i>	<i>w/o Utilities</i>
Mean	28214.28571	13122.68908
Variance	42171260.5	14631260.5
Observations	35	119
Hypothesized Mean Difference	0	
df	41	
t Stat	13.09668885	
P(T<=t) one-tail	1.53555E-16	
t Critical one-tail	1.682878003	
P(T<=t) two-tail	3.07111E-16	
t Critical two-tail	2.019540948	

2004

Unadjusted, with Utilities

	<i>w/ Utilities</i>	<i>w/o Utilities</i>
Mean	46068.18182	34650.35461
Variance	138797510.8	130920803.4
Observations	22	141
Hypothesized Mean Difference	0	
df	28	
t Stat	4.244136614	
P(T<=t) one-tail	0.000108832	
t Critical one-tail	1.701130908	
P(T<=t) two-tail	0.000217664	
t Critical two-tail	2.048407115	

2005

Unadjusted, with Utilities

	<i>w/ Utilities</i>	<i>w/o Utilities</i>
Mean	101000	73992.10526
Variance	282628125	319373003.5
Observations	33	76
Hypothesized Mean Difference	0	
df	64	
t Stat	7.558755544	
P(T<=t) one-tail	9.6688E-11	
t Critical one-tail	1.669013026	
P(T<=t) two-tail	1.93376E-10	
t Critical two-tail	1.997729633	

2006

Unadjusted, with Utilities

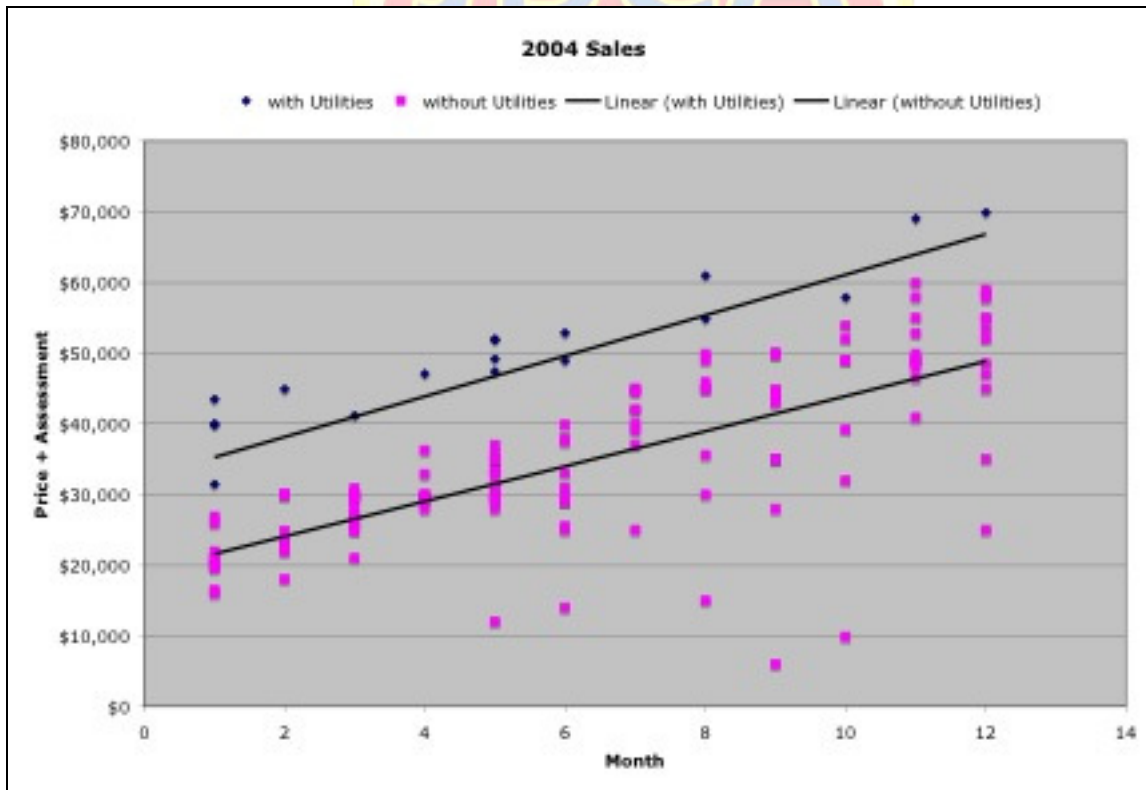
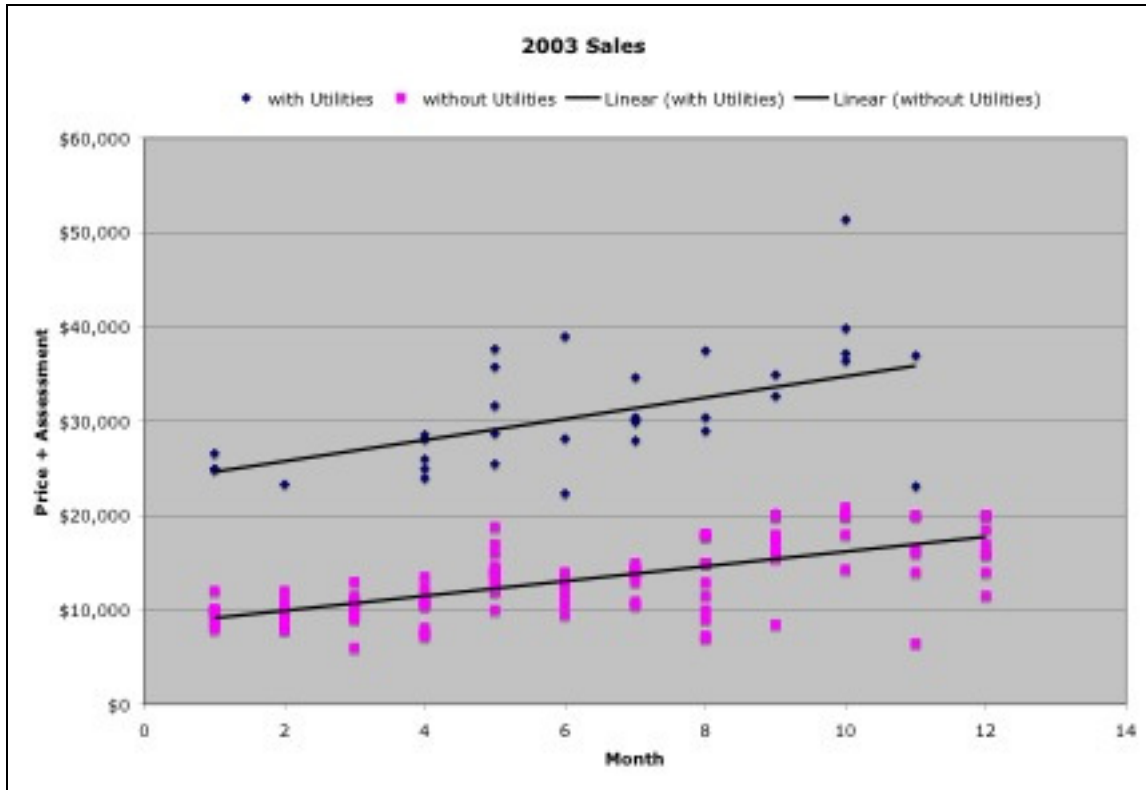
	<i>w/ Utilities</i>	<i>w/o Utilities</i>
Mean	110666.6667	93090
Variance	240333333.3	520836555.6
Observations	3	10
Hypothesized Mean Difference	0	
df	5	
t Stat	1.528725061	
P(T<=t) one-tail	0.093438239	
t Critical one-tail	2.015048372	
P(T<=t) two-tail	0.186876479	
t Critical two-tail	2.570581835	

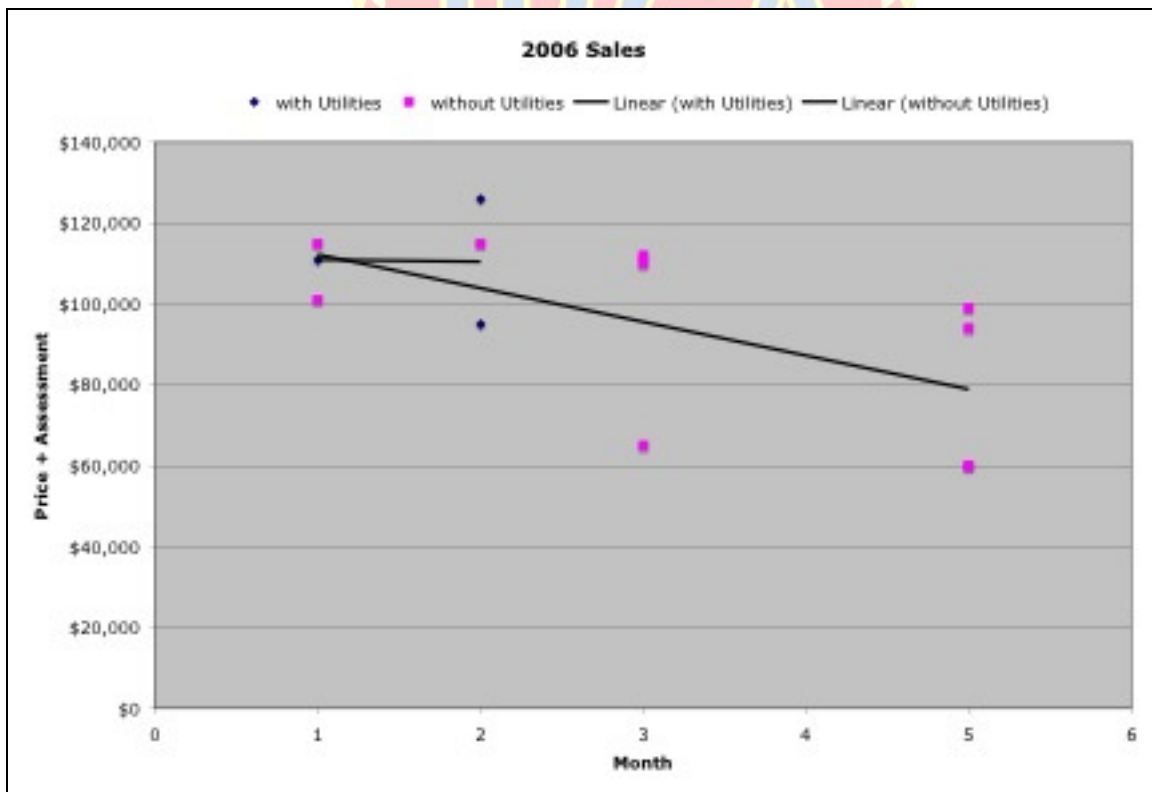
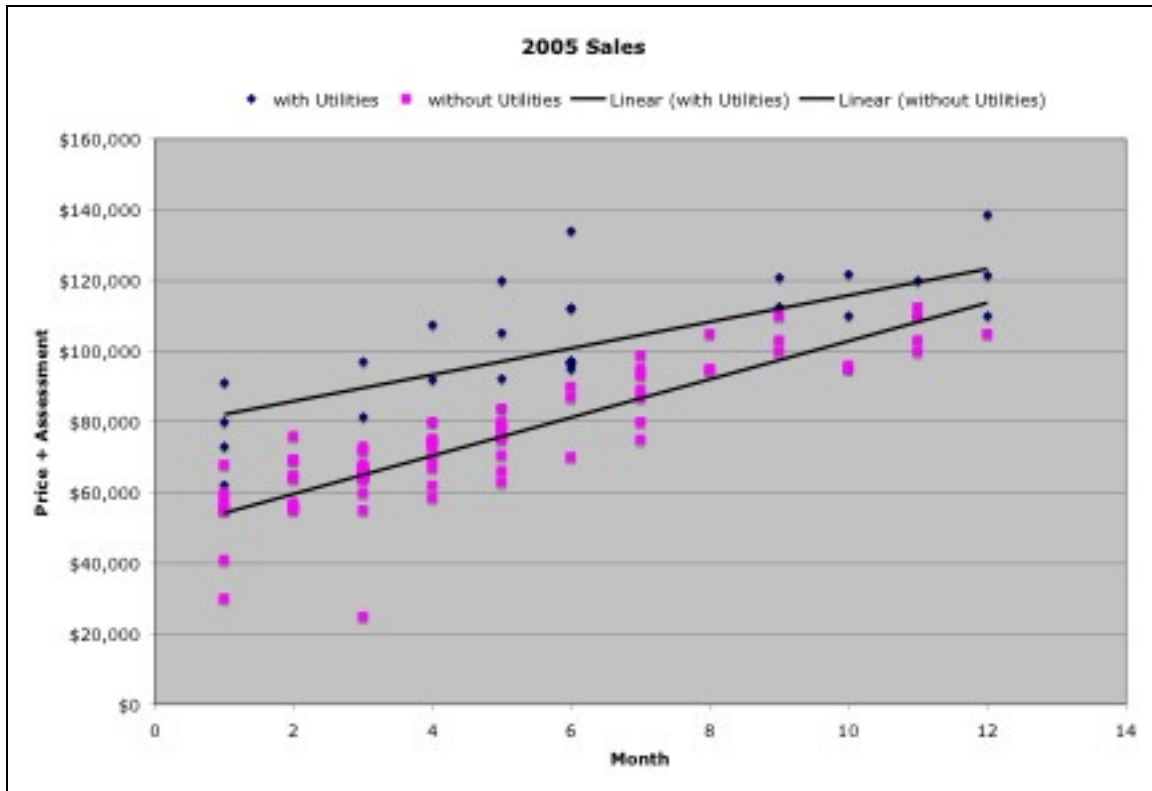
All Years

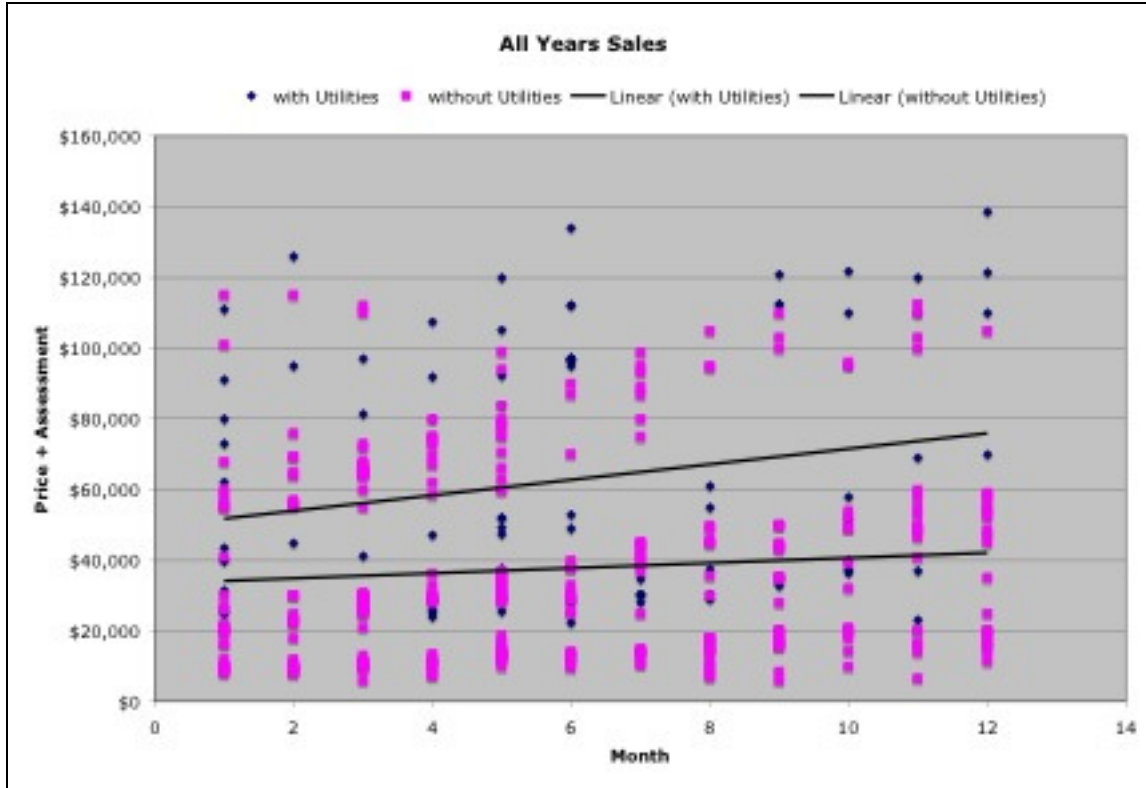
Unadjusted, with Utilities

	<i>w/ Utilities</i>	<i>w/o Utilities</i>
Mean	60924.73118	37576.87861
Variance	1267389708	732361376.9
Observations	93	346
Hypothesized Mean Difference	0	
df	122	
t Stat	5.88413377	
P(T<=t) one-tail	1.79789E-08	
t Critical one-tail	1.6574395	
P(T<=t) two-tail	3.59578E-08	
t Critical two-tail	1.979599854	

Scatter Plots of Data







Answers to Case-Related Questions

1. Did the mean sales prices of lots with utilities exceed the prices of lots without utilities?

	With Utilities	W/O Utilities	Diff. in Means	t-stat
2003	\$28,214	\$13,123	\$15,092	13.10
2004	\$46,068	\$34,650	\$11,418	4.24
2005	\$101,000	\$73,992	\$27,008	7.56
2006	\$110,667	\$93,090	\$17,577	1.53
All Years	\$60,925	\$37,577	\$23,348	5.88

The chart, above, provides the mean selling price of lots with and without utilities, for each year, as well as the difference in these prices and t-statistics of these differences. The mean prices of lots with utilities did exceed the mean prices of lots without utilities for every year. These differences are significant at the 1% level for 2003, 2004, 2005, and the entire sample.

2. Are the special assessments justified based on the mean differences in lot prices?

The special assessments do appear to be justified. The prices of the lots with utilities are \$23,000 higher, on average, for the period examined. The year with the lowest average difference in sales prices is 2004, and even during this year, the special assessments appear to increase the average value of a lot by enough to justify the assessment.

3. What impact would you expect the unpaid assessments to have on the sales prices of the lots with utilities?

You should expect that an unpaid assessment would lower the sales price of a lot with utilities by the amount of the assessment. A buyer who has to pay an assessment on a lot that is purchased would discount the price they are willing to pay by the amount of the assessment, so that the total price (cost of the lot plus assessment) is equal to the total value that the buyer places on the lot.

4. Adjust the sales prices of the lots with unpaid assessments to more accurately reflect the price the buyer is paying for the property. Re-examine the sales prices as outlined in the case requirements using the adjusted sales prices. How does this impact your analysis?

	With Utilities	W/O Utilities	Diff. in Means	t-stat
2003	\$30,683	\$13,123	\$17,560	15.45
2004	\$47,263	\$34,650	\$12,613	4.69
2005	\$102,266	\$73,992	\$28,274	7.78
2006	\$110,667	\$93,090	\$17,577	1.53
All Years	\$62,586	\$37,577	\$25,009	6.36

The chart, above, provides the mean selling price of lots with utilities, adjusted for the unpaid assessment, and lots without utilities, for each year, as well as the difference in these prices and t-statistics of these differences. The mean prices of lots with utilities, especially when adjusted for assessments, exceed the mean prices of lots without utilities for every year. These differences are significant at the 1% level for 2003, 2004, 2005, and the entire sample.

5. What if any other data could have been used to strengthen the analysis?

Additional data that would strengthen this analysis would include the total amount of the special assessment that was paid by the sellers of the lots with utilities (or those who previously paid any special assessments) and/or the cost to place utilities on a lot without them. These data would allow the “real estate appraiser” to fully analyze the net value that the special assessment (or the addition of utilities) added to the lots in this case and/or the true cost of buying a lot without utilities and adding utilities to it.

In addition, data on the location of the lots with utilities versus those without utilities would provide insight. For example, the lots with utilities may have this due to their proximity to the downtown, main roadways, schools, or other desirable areas in the city, thus require a premium to purchase. While the lots without utilities may be further away from the city or in less desirable locations and sell for less due to their location.

6. Is the data sufficient to draw conclusions about the value of the improvements as reflected by the 2006 transactions?

When examining the sales in 2006, the analyst will see that there were only 3 lots sold with utilities and 10 lots sold without utilities. This total of 13 transactions is not sufficient by itself to draw any conclusions about the value of improvements.

7. How is the efficiency of the market, or lack thereof, demonstrated in the observed prices?

Based on the data in this case, it would appear that this market is not efficient. The prices of lots with utilities (especially when factoring in the unpaid assessments) greatly exceed the prices of otherwise equivalent lots without utilities. The question then becomes, what is the cost to place utilities on a lot without them, and does this total cost exceed that of purchasing a lot with utilities already in place?

