**On the Waterfront: A 25 Year Study of the Relative Risk & Return of Florida Single-Family Waterfront and Inland Homes (1977–2002)**

by

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A.B. Economics, 1999
Middlebury College

Submitted to the Department of Architecture in partial fulfillment of the requirements for the degree of

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# ON THE WATERFRONT:
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## ABSTRACT

This study applies the classic capital markets risk/return relationship—the riskier the investment, the greater the expected return—to the single-family home market. Treating coastal waterfront property as a unique asset class, its investment performance is measured and compared with that of inland property to determine the potential existence of a "mispricing" in the home market. Using single-family home transaction data from four coastal Florida counties, this thesis uses a repeat-sales regression technique to estimate annual home price changes and to construct home price indices for the period 1977-2002. The resulting price indices show a higher average annual appreciation rate for waterfront homes relative to inland homes; the highest waterfront price appreciation occurred over the period 1997-2002. The results also indicate that waterfront homes in two of the four study counties experienced higher average price appreciation at lower levels of risk than the inland homes. This finding indicates a potential "mispricing" of waterfront homes.

Thesis Supervisor: Dr. Henry O. Pollakowski
Title: Visiting Scholar, Center for Real Estate

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# BIOGRAPHY

Forrest A. Westin is a graduate student at the Massachusetts Institute of Technology Center for Real Estate. Prior to attending MIT, he was an Associate with Opus X, Inc., a real estate development and management company specializing in multi-family, assisted living, land development, and historic renovation projects across the United States. Before joining the Opus X team, Forrest worked with One Digital Drive, a First American Corporation-incubated company providing an internet-based transaction engine for streamlining the real estate sales and closing processes. Forrest began his career in the investment banking training program at Deutsche Banc Alex. Brown.

Forrest was born and raised in Orinda, California. He currently resides with his fiancée in the Fenway Neighborhood of Boston, Massachusetts.

Forrest earned an A.B. in Economics, magna cum laude, from Middlebury College in 1999. He is a graduate of the class of 1995 from Miramonte High School.

# TABLE OF CONTENTS

# INTRODUCTION

Real estate agents, in the business of selling waterfront property, are quick to describe waterfront property as a "no lose" investment; this "no lose" proposition, translated into the language of finance, is another way of saying that the investment in waterfront property offers high ex ante (expected) returns with little perceived risk. This perception is paradoxical when viewed from a classic capital markets asset pricing perspective. The capital markets expect high returns to compensate the holding of high risk assets, while relatively lower risk assets require lower expected returns. If the perceived risk/return relationship of waterfront property are actually borne out, ex post, it would imply that waterfront property potentially represents an anomalous asset (as viewed from the classic capital markets perspective)—high return and low risk.

## Hypothesis

This thesis quantitatively examines the investment characteristics—price appreciation and volatility—of waterfront property relative to inland property. The null hypothesis assumes returns on waterfront property and inland property will adhere to the classic capital market risk/return relationship. The alternate hypothesis assumes an irregular relationship between the return on waterfront property and its observable risk. A finding of high return and low relative risk for waterfront property, the "no lose" proposition, would be an embodiment of the alternate hypothesis.

## Florida Waterfront

To test these hypotheses, this study examines the relative price appreciation (return) and changes (risk) of owner-occupied single family homes in four Florida waterfront counties, over the period 1977 – 2002. The four counties selected, and their respective Metropolitan Statistical Areas ("MSAs"), are Dade County (Miami), Lee County (Ft. Myers), Escambia County (Pensacola), and Volusia County (Daytona). Florida was selected due to its vast coastline and rich data sources. The four counties selected represent a geographically and demographically diverse grouping; all four counties also have significant coastal frontage, a criterion of central concern in this study.

## Organization

The first chapter of this thesis defines the capital markets risk/return relationship. The second chapter outlines the research methodology used in collecting and screening the data and building the repeat-sales indices used in this study. The third chapter delves into the statistical analysis conducted in building and testing the repeat-sales indices. The fourth chapter summarizes the results and findings of the repeat-sales regressions. Finally, the fifth chapter summarizes the conclusions of this study.

# RISK, RETURN, AND THE CAPITAL MARKETS

## Risk

Investment risk can be defined in many ways, but all definitions relate to the probability of receiving a return on an investment over a specified time period. The range in probable future returns, or degree of dispersion around the ex ante expected return, is the quantifiable normal risk in an investment in any asset. The most widely used statistical measure of dispersion is standard deviation. The standard deviation, or dispersion, around the mean expected return is known as volatility and represents the risk in the investment. Put simply, the greater the standard deviation, the greater the probability of loss, and thus the greater the level of risk. For the purposes of this study, risk is defined as volatility, and quantified by the standard deviation around the mean expected return.

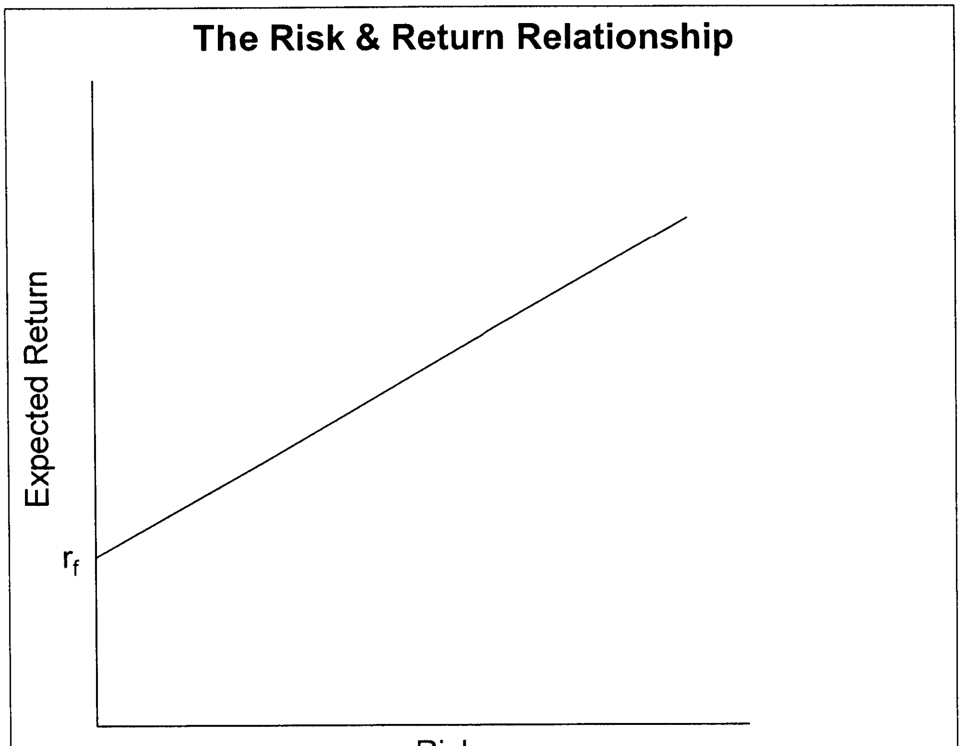
## Return

The returns examined in this study are simple holding period returns. Return is defined as the annualized change in home price or capital appreciation between transaction dates. Unlike other types of real estate that feature both income (yield) and appreciation (growth) components of return, an investment return on a single-family owner occupied residence is wholly composed of price change—the appreciation component of return.

Return is a first moment statistical measure and is represented by the mean of the probability distribution; risk is a second moment statistical measure and is represented by the dispersion (standard deviation) of possible returns around the mean. Second moment measures are much more susceptible to the effects of random noise, a topic which will be discussed at length in the Statistical Analysis section of this study.

## Capital Markets

The relationship between risk and return is typically quite simple, the riskier the investment, the greater should be the expected return, ceteris paribus. Geltner and Miller (2001) describe this relationship as the "most fundamental point in the financial economic theory of capital markets."[1] The graph below depicts the classic capital markets risk/return relationship.




Source: Commercial Real Estate Analysis and Investment (2001)

To better understand the above graph, consider the following example. An investor is faced with the decision of investing in one of two assets—Asset A and B. Asset A is identical in everyway to Asset B except that Asset B is more volatile (a riskier asset). If the two assets are selling for the same price why would an investor ever invest in Asset B? The answer is a rational investor, and therefore the market as whole, would never invest in Asset B unless it was less

[1] Geltner, D. and N. Miller. Commercial Real Estate Analysis and Investments, South-Western Publishing, 2001. p.195

expensive than Asset A. Through the forces of supply and demand, investors would bid up the price of Asset A and down the price of Asset B; the changing prices of the assets would in effect change the expected returns of the respective investments. The price of Asset B would fall relative to Asset A until an equilibrium price level is reached; at equilibrium, Asset B would offer just enough additional expected return (created by the price reduction) to compensate the investor for the greater risk.[2]

The capital markets typically obey this risk/return relationship and price investments accordingly; the paradigm assumes investors to be rational and risk adverse. Occasionally an asset "mispricing"—low risk relative to the expected return—will occur, but such a "mispricing" is typically quickly taken advantage of and arbitrage profits are gained by the lucky few.

This study applies this classic capital markets risk/return relationship to coastal waterfront property. Treating coastal waterfront property as a unique asset class, its risk and return performance is measured over time and compared with that of inland property to determine the potential existence of a "mispricing" in the property market.

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[2] Ibid., p.194.

# METHODOLOGY

## Literature Review

The methodology used in this study to analyze the relative return and risk of coastal waterfront and inland homes was developed from comparable studies and time-tested statistical techniques. In order to estimate home price change over time and location, and given data limitations, a repeat-sales regression methodology ("RSR") was selected for this study. The RSR was first introduced by Bailey, Muth, and Nourse (1963) and later extended by Case and Shiller (1987, 1989). The RSR produces a price index by examining price changes of homes sold two or more times within a specified time period. Imperative to the success of the RSR is the assumption that house quality, as measured by the square footage, number of bedrooms and bathrooms, pools and other amenities, stays constant between observable transaction dates; changes in home price should be wholly attributable to the passing of time, not the changing quality of the property.

The methodology used for this study mirrors the approach used in Cordes, Gatzlaff, and Yezer (2001) and Gatzlaff and Geltner (1998). As discussed by Cordes et al., the primary advantage of the RSR vis-à-vis a hedonic regression method ("HR") is the less stringent data requirements.[3] The RSR relies upon a set of paired transactions and only requires the transaction prices and dates; unlike the hedonic method, the researcher needs not identify and normalize property attributes and amenities across observations.[4] A HR would also be appropriate for this study, but due to the nature of the data available, a RSR method was adopted.

The RSR is not without its faults. Among the faults are issues inherent to real estate. Unlike the informational and transaction efficient debt and equity

[3] Cordes, J., D. Gatzlaff, and A. Yezer, (2001). "To the Water's Edge, and Beyond: Effects of Shore Protection Projects on Beach Development," *Journal of Real Estate Finance and Economics*, Vol. 22 (2-3). p.293.
[4] Ibid., p. 293.

markets, the market for real estate is rather inefficient. Changes in economic conditions are not instantaneously factored into home prices and the time between sale dates is rather long and sporadic. For these reasons, caution must be exercised when attempting to compare the home price indices created in this study with those of other asset classes.

## Data Source

The source of the data for this study is the Florida Department of Revenue ("DOR"). The Florida DOR maintains a robust archive of property-tax records for use in updating property-tax assessments. These records are collected and maintained on a parcel level by each county's property appraiser's office. The data record for each parcel includes 58 data fields; for each parcel, the data record includes the parcel number, owner's street address, land use code, assessed land and property values, effective or actual year of major improvement, most recent sales price and date, second most recent sales price and date, homestead tax status, and several other property and tax fields.

The transaction period selected to build the initial dataset for this study is January 1, 1970 to December 31, 2002. 1970 was selected as the start date, because data integrity prior to 1970 is questionable.[5] The data for 2002 is incomplete due to slow recording speed; approximately one-half of the 2002 transactions were included in the database. Through the data screening process and statistical analysis, described in the following sections, the data before 1977 was found to be incomplete for Dade County and Lee County and, thus for the purposes of comparison and statistical significance, 1977 was selected as the base year for the RSRs.

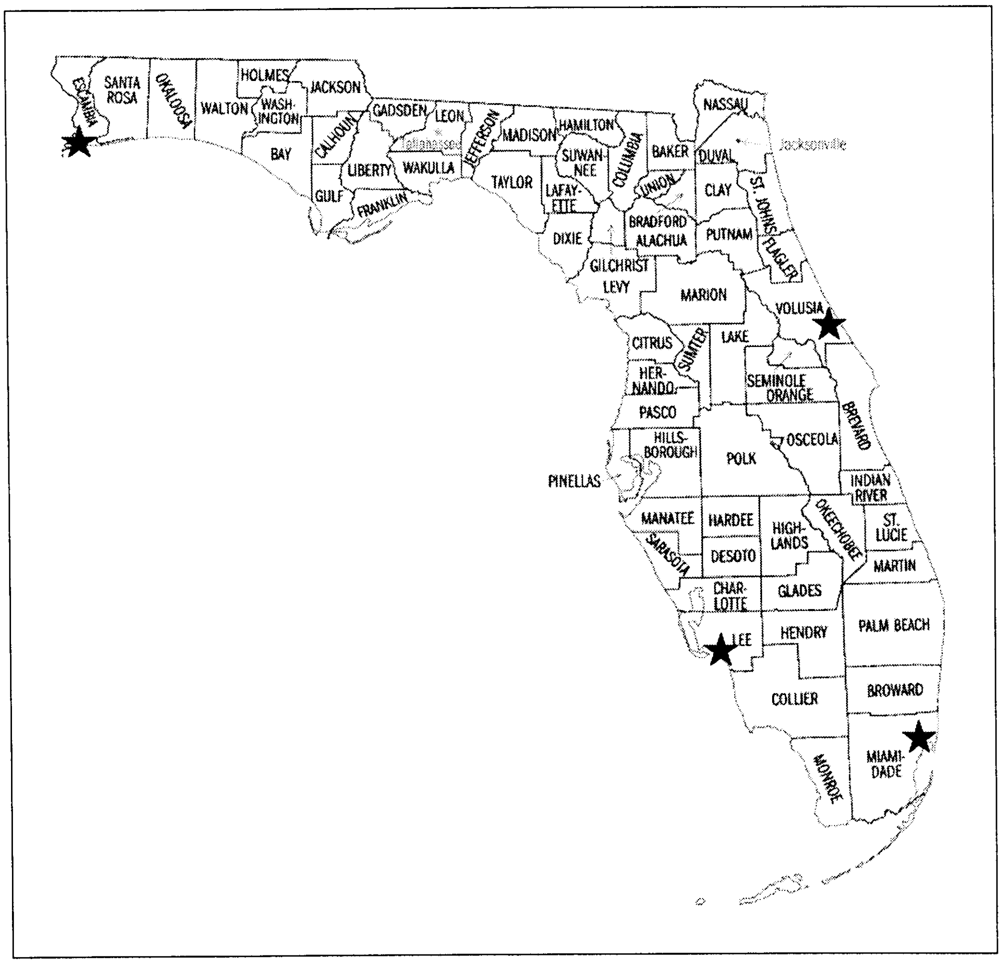
## County Selection

Four Florida counties, and their respective MSAs, selected for this study were: Dade County (Miami), Lee County (Ft. Myers), Escambia County

[5] 1970 was selected as the start date upon the recommendation of Dr. Dean Gatzlaff of Florida State University who has many years of experience working with the Florida DOR data.

(Pensacola), and Volusia County (Daytona). These counties were selected due to their geographic and demographic differences as well as their vast coastlines.

Geographically, these counties represent four corners of the state: Dade County is located in the Southeast, Lee County in the Southwest, Escambia County in the Northwest, and Volusia County in the Northeast. The four counties are indicated by stars in the Florida map below. [6]




Demographically, the four counties vary with respect to population, growth, income, size, and density. The table below summarizes a few of the key Census metrics.[7]

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[6] U.S. Census Bureau, Florida County Selection Map, *at* http://quickfacts.census.gov/qfd/maps/florida_map.html (accessed July 27, 2003).
[7] Ibid., 2000 Census Data: Dade County, Lee County, Escambia County, and Volusia County.

**2000 Census Data**

| STATISTICS | DADE | LEE | ESCAMBIA | VOLUSIA |
|---|---|---|---|---|
| Population | 2,253,362 | 440,888 | 294,410 | 443,343 |
| Pop Change 1990 - 2000 | 16.3% | 31.6% | 12.2% | 19.60% |
| % Under 18 | 24.8% | 19.6% | 23.5% | 20.30% |
| % Over 65 | 13.3% | 25.4% | 13.3% | 22.10% |
| Median Household Income | $35,966 | $40,319 | $35,234 | $35,219 |
| Housing Units | 852,278 | 245,405 | 124,647 | 211,938 |
| Homeownership Rate | 57.8% | 76.5% | 67.3% | 75.30% |
| Land Area (square miles) | 1,946 | 804 | 662 | 1,103 |
| Persons per square mile | 1,158 | 549 | 445 | 402 |

## Data Screening

Following the data screening process utilized in Gatzlaff and Ling (1994) and Cordes, Gatzlaff, and Yezer (2001), this study examines the price changes of single-family owner occupied detached homes over time. Condominium, multi-family, and commercial real estate uses, although interesting, are not included in this study due to the nature of the dataset.[8] The original data set received from the Florida DOR contained over 1.5 million observations; each observation contains information on two sales transactions. The table below presents the number of observations in the original data set available from the Florida DOR as of February 2003; the information is presented by county.

| County | Observations (#) |
|---|---|
| Dade | 735,610 |
| Lee | 453,885 |
| Escambia | 141,155 |
| Volusia | 260,435 |
| TOTAL | 1,591,085 |

[8] The address included in the data set is the tax billing address for the owner of record. For this spatially focused study, it is imperative that the sale price refer to the street address in the Florida DOR database. Such a link can only be confidently made for owner-occupied single family homes.

The first step in building the database, to be used for the RSRs, was to isolate the owner-occupied single-family homes. Owner-occupied residences were identified as those properties with a homestead tax exemption of $25,000 or a value greater than $0 for those homes with assessed values less than $25,000. The table below summarizes the results of this initial screening.

| County | Observations (#) |
|---|---|
| Dade | 248,265 |
| Lee | 93,037 |
| Escambia | 64,806 |
| Volusia | 104,687 |
| TOTAL | 510,795 |

The next step was to remove observations with non-arm's length transactions or missing transaction price information. Homes transacted for $1, mere legal consideration, or homes with no transaction price at all were removed. The table below shows the results of this second screening.

| County | Observations (#) |
|---|---|
| Dade | 93,200 |
| Lee | 68,453 |
| Escambia | 49,231 |
| Volusia | 80,575 |
| TOTAL | 291,459 |

To control for substantial capital improvements, the dataset was screened for transactions where the effective or year-built date was later than the initial sale date. The effective or year-built date is updated whenever a building permit is issued.[9] In order to isolate the pure effects of time on the price changes of the homes studied, all homes having undergone substantial renovation between

[9] Building permits in the areas studied are necessary for improvements in excess of $500.

transaction dates were removed. The remaining numbers of observation are presented in the table below.

| County | Observations (#) |
|---|---|
| Dade | 71,979 |
| Lee | 46,116 |
| Escambia | 40,634 |
| Volusia | 62,987 |
| TOTAL | 221,716 |

To catch any remaining non-owner occupied properties or properties without street addresses, the data was screened for all remaining out-of-state, out-of-county, confidential, military, and post office boxes. The totals, after the removal of these observations, are presented in the table below.

| County | Observations (#) |
|---|---|
| Dade | 69,271 |
| Lee | 44,357 |
| Escambia | 38,288 |
| Volusia | 60,388 |
| TOTAL | 212,304 |

In order to construct an index that reflects the "typical" single family home, the following additional screening measures were taken.[10] To remove unimproved, condemned, or marginally improved properties, all properties whose assessed land value equals or exceeds the assessed property value were deleted. If the sale price was less than $10,000, the home was deleted. If the assessed value was less than $1,000, the home was deleted. If the vacant or improved code

[10] Screening procedures used to identify "typical" single family homes were recommended by Dr. Dean Gatzlaff. The screening procedures are of great importance in normalizing the property types and transaction so as to obtain the purest effect of time on appreciation.

showed the property to be vacant, it was deleted. To maintain the integrity of the data, all homes constructed prior to 1901 were deleted. Finally, only transactions occurring on or after January 1, 1970 were included in the database. The screening procedure yielded the following observation totals.

| County | Observations (#) |
|---|---|
| Dade | 42,464 |
| Lee | 18,540 |
| Escambia | 17,166 |
| Volusia | 25,641 |
| TOTAL | 103,811 |

Confident that the remaining observations represent arm's length transactions of owner-occupied single family residences within the specified county and that the selected properties have undergone insignificant capital improvements and represent "typical" properties and transactions, the next step was to obtain the location of each property relative to the nearest coastal water.

## Geocoding

Using Graphical Information System ("GIS") software, the owner's street address for each observation was compared with and plotted on a county street map.[11] See Appendix I for a map showing the plotted addresses for each county. GIS software compares the street addresses and zip codes in the DOR database to the street addresses and zip codes located in the county street map; matched properties are assigned a latitudinal and longitudinal coordinate. Unmatched properties are frequent and typical using GIS software and may result from spelling errors or street name changes; no location-bias appears to exist for unmatched scores. All properties are given match properties. A score in excess of 80 is considered excellent, a score between 51 and 80 is fair to good, and a

[11] Florida Geographic Data Library, *at* http://map.fgdl.org/download (accessed July 27, 2003). Maps: Dade, Lee, Escambia, and Volusia County Street Center Line

score below 51 is considered unmatched. The table below shows the high degree of success this study experienced in the geocoding process.

| County | Total Observations | Geocode ≥ 80 score | Geocode < 80 ≥ 51 score | No match < 51 |
|---|---|---|---|---|
| Dade | 42,464 | 40,988 (97%) | 312 (1%) | 1,164 (3%) |
| Lee | 18,540 | 17,113 (92%) | 646 (3%) | 781 (4%) |
| Escambia | 17,166 | 16,066 (94%) | 638 (4%) | 462 (3%) |
| Volusia | 25,641 | 23,153 (90%) | 847 (3%) | 1,641 (6%) |
| TOTAL | 103,811 | 97,320 (94%) | 2,443 (2%) | 4,048 (4%) |

For the purposes of this study, and due to the success of the geocoding, only those addresses with a match score of 70 or higher—good to perfect—were included. The final observation count, used in building the dataset for this study, is presented in the table below.

| County | Observations (#) |
|---|---|
| Dade | 41,018 |
| Lee | 17,159 |
| Escambia | 16,119 |
| Volusia | 23,235 |
| TOTAL | 97,531 |

The Florida Geographical Data Library provided a map of the state's coastal waterways.[12] From this coastline map, two new maps were created for each county. The first map included only the coastline that touches the open ocean. The second map included all the coastal waterways—open ocean, bays, and inner-coastal waterways.

An algorithm was then used to compute the distance from each geocoded residence to the nearest open ocean and to the nearest coastal waterway. These distances, measured in meters, were then added as additional fields to the pre-screened dataset described above.

[12] Ibid., Map: Coastline, Estuaries, and Tidal Rivers

After determining these two measurements, the distance to the nearest coastal waterway (open ocean, bay, or inner-coastal) was selected for use in this study. Although a premium may exist for oceanfront property, the inner-coastal waterways also offer a great amenity to proximate property owners. While the oceanfront offers the beach, the inner-coastal offers boating access, and both locations offer excellent water views and both demand price premiums. This study thus compares relative price appreciation and volatility of coastal waterfront versus inland single family homes over time.

## Repeat-Sales Indices

A spatially modified ordinary least-squares ("OLS") regression technique, suggested by Cordes, Gatzlaff, and Yezer (2001), was used in building repeat-sales indices for this study.

To isolate and compare the relative investment performance of properties based on proximity to the nearest coastal water, five index groups were created. The table below defines the groupings and the relative distances to the closest coastal water.

| Group | Distance from Water |
|---|---:|
| 1 – Waterfront | 0 – 250 meters |
| 2 – Water Access | 251 – 500 meters |
| 3 – Transition | 501 – 2500 meters |
| 4 – Inland | 2501 – Max meters |
| 5 – All | All observations |

Each county's dataset was segmented into five groups and an RSR was run for each group.

The RSR specification used for this study was drawn from Gatzlaff and Geltner (1998).[13] The simplified regression equation is defined as:

$$\mathbf{Y = \beta D_t + \varepsilon}$$

[13] Gatzlaff D and D. Geltner, (1998). "A Transaction-Based Index of Commercial Property and its Comparison to the NCREIF index," *Real Estate Finance*, Vol. 15 (1): Spring 1998. p.9.

Where **Y** is a column vector equal to the natural log of the most recent sales price divided by the previous sales price or $\mathbf{ln(P_2/P_1)}$. $\beta$ is a column vector of the period-by-period home price changes estimated by the regression. $\mathbf{D_t}$ is the dummy variable matrix—rows correspond to the transaction price and columns correspond to the transaction year—for each time period 1970 through 2002; the dummy variable equals one for all years between the two transaction years (including the most recent sale year and excluding the first sale year) and zero for all other years.[14] $\varepsilon$ is a column vector of the error term in the regression; error is measured as the difference between the regressions predicted price change vis-à-vis the actual period-by-period price change.[15] No constant term is used in the RSR specification used in this study.

The regression coefficients ($\beta$) estimated from the RSR, utilizing this specification, are the period-by-period percentage home price changes. From these home price change estimates, indices were created. The indices were built by first determining the accumulated log levels (continuously compounded returns) for each period; these levels are defined as the sum of all coefficients prior to and including the specified year. Thus, the accumulated log level for 1972 would equal $\boldsymbol{\beta_{72} + \beta_{71} + \beta_{70}}$. Once the accumulated log level for each period was determined, a straight level index ("INDEX") or annual wealth relative was generated for each period. The INDEX is equal to the exponentiated log of the accumulated log level for the specified period. Therefore, the INDEX for 1972 would equal $\mathbf{e\hat{}(\beta_{72} + \beta_{71} + \beta_{70})}$.

After a thorough examination of the dataset used in this study and for reasons discussed at length in the Statistical Analysis section of this study, year end 1977 was selected as the base year for the repeat-sales indices; the repeat-sales indices trace the twenty-five year history of home price appreciation—December 31, 1977 to December 31, 2002.

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[14] A more typical textbook RSR equation may define dummy variables as -1 for the first transaction year, +1 for the second transaction year, and 0 for all other years. The coefficients yielded from such a specification are log levels as opposed to price change or return levels generated with the RSR specification used in this study. The two approaches are comparable and yield the same results, but just in different forms.
[15] Ibid., p.9.

# STATISTICAL ANALYSIS

Before the RSRs were run, the dataset was run through some intuitive trials to examine the integrity of the data and to flush-out potential problems. This chapter highlights a number of the statistical tests run and describes the solutions invoked.

## Descriptive Statistics

The first analysis conducted was a simple descriptive statistics summary, the results of which are presented by county in the charts below.

**DADE COUNTY**

| *DESCRIPTIVE* | *YEAR 2* | *YEAR 1* | *PRICE 2* | *PRICE 1* | *DIST COASTAL* |
|---|---|---|---|---|---|
| Mean | 1995.68 | 1989.89 | 155684.16 | 126943.88 | 5853.86 |
| Standard Error | 0.03 | 0.03 | 689.47 | 698.20 | 24.04 |
| Median | 1997 | 1990 | 124000 | 94900 | 4406.35 |
| Mode | 2001 | 1993 | 125000 | 75000 | 1335.87 |
| Standard Deviation | 5.10 | 6.19 | 139637.93 | 141405.79 | 4869.52 |
| Sample Variance | 25.99 | 38.27 | 1.9499E+10 | 1.9996E+10 | 23712196.24 |
| Kurtosis | 0.37 | -0.92 | 133.25 | 408.52 | -0.83 |
| Skewness | -1.01 | -0.24 | 7.37 | 11.99 | 0.63 |
| Range | 25 | 26 | 5589700 | 8514000 | 20629 |
| Minimum | 1977 | 1976 | 10300 | 10000 | 0.04 |
| Maximum | 2002 | 2002 | 5600000 | 8524000 | 20629 |
| Sum | 81858752 | 81621239 | 6385853016 | 5206983889 | 240113767 |
| Count | 41018 | 41018 | 41018 | 41018 | 41018 |

**LEE COUNTY**

| *DESCRIPTIVE* | *YEAR 2* | *YEAR 1* | *PRICE 2* | *PRICE 1* | *DIST COASTAL* |
|---|---|---|---|---|---|
| Mean | 1996.76 | 1991.53 | 113368.32 | 105753.82 | 3409.48 |
| Standard Error | 0.04 | 0.04 | 706.20 | 3205.62 | 39.27 |
| Median | 1998 | 1992 | 89900 | 75800 | 1343.5 |
| Mode | 2001 | 1994 | 65000 | 50000 | 39.6 |
| Standard Deviation | 4.60 | 5.83 | 92507.17 | 419911.64 | 5144.48 |
| Sample Variance | 21.14 | 33.94 | 8557575938 | 1.7633E+11 | 26465635 |
| Kurtosis | 1.58 | -0.35 | 155.30 | 2166.28 | 2.99 |
| Skewness | -1.32 | -0.51 | 7.45 | 45.40 | 2.03 |
| Range | 25 | 32 | 3490000 | 20251900 | 26909 |
| Minimum | 1977 | 1970 | 10000 | 10000 | 0.05 |
| Maximum | 2002 | 2002 | 3500000 | 20261900 | 26909 |
| Sum | 34262404 | 34172683 | 1945287019 | 1814629813 | 58503184 |
| Count | 17159 | 17159 | 17159 | 17159 | 17159 |

**ESCAMBIA COUNTY**

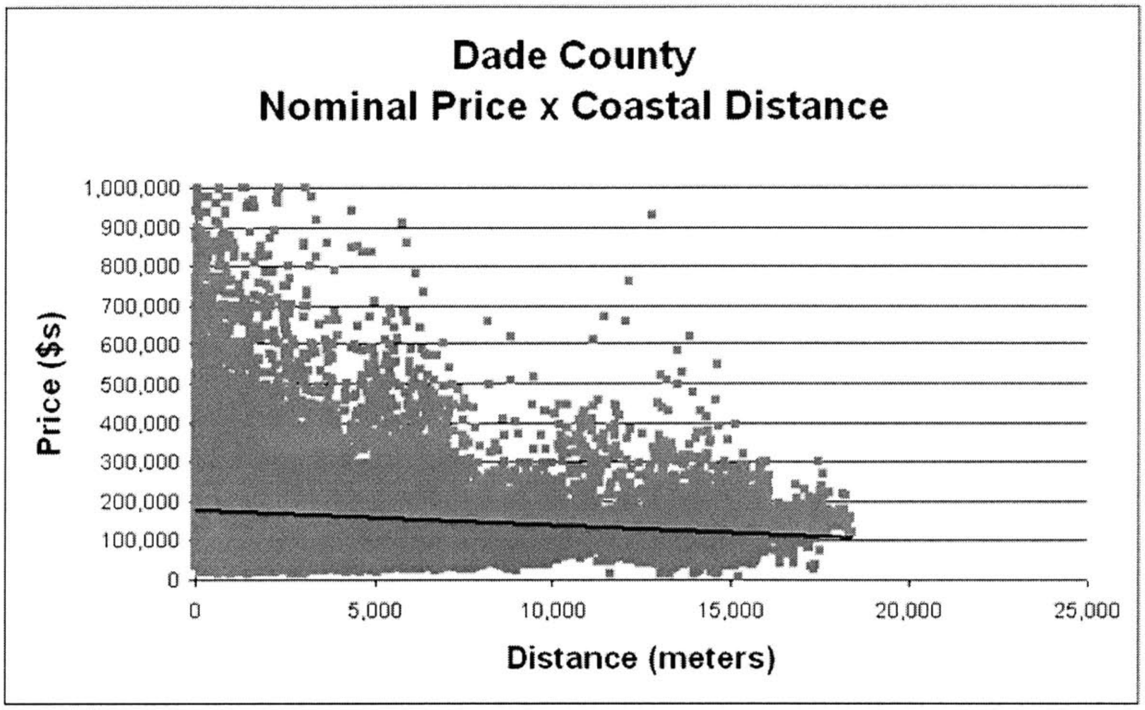
| *DESCRIPTIVE* | *YEAR 2* | *YEAR 1* | *PRICE 2* | *PRICE 1* | *DIST COASTAL* |
|---|---|---|---|---|---|
| Mean | 1994.04 | 1987.84 | 76380.57 | 64466.83 | 3504.14 |
| Standard Error | 0.06 | 0.06 | 428.10 | 988.69 | 32.23 |
| Median | 1996 | 1989 | 67000 | 52300 | 2314.6 |
| Mode | 2001 | 1996 | 65000 | 45000 | 1059.5 |
| Standard Deviation | 6.99 | 8.09 | 54351.32 | 125525.01 | 4091.81 |
| Sample Variance | 48.91 | 65.43 | 2954066170 | 15756527554 | 16742870.5 |
| Kurtosis | 1.14 | -0.74 | 436.16 | 4965.11 | 36.30 |
| Skewness | -1.32 | -0.52 | 10.52 | 63.78869756 | 4.35 |
| Range | 32 | 32 | 2840000 | 10030500 | 56971 |
| Minimum | 1970 | 1970 | 10000 | 10000 | 6.19 |
| Maximum | 2002 | 2002 | 2850000 | 10040500 | 56978 |
| Sum | 32141928 | 32041957 | 1231178355 | 1039140771 | 56483204.53 |
| Count | 16119 | 16119 | 16119 | 16119 | 16119 |

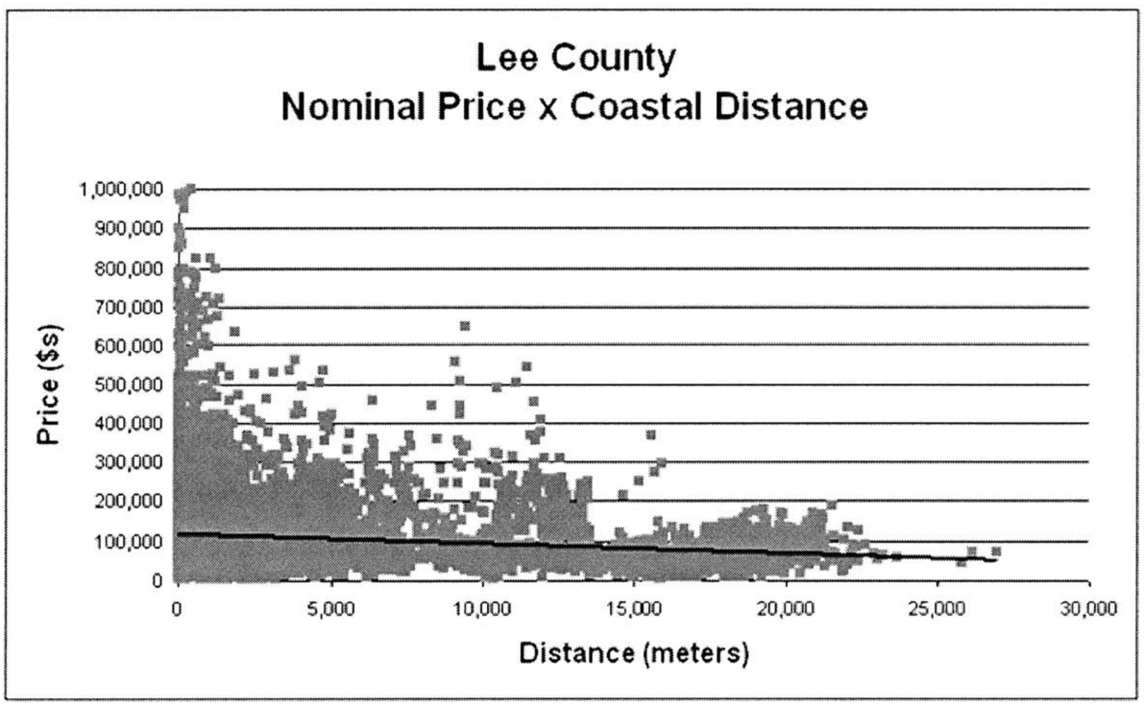
**VOLUSIA COUNTY**

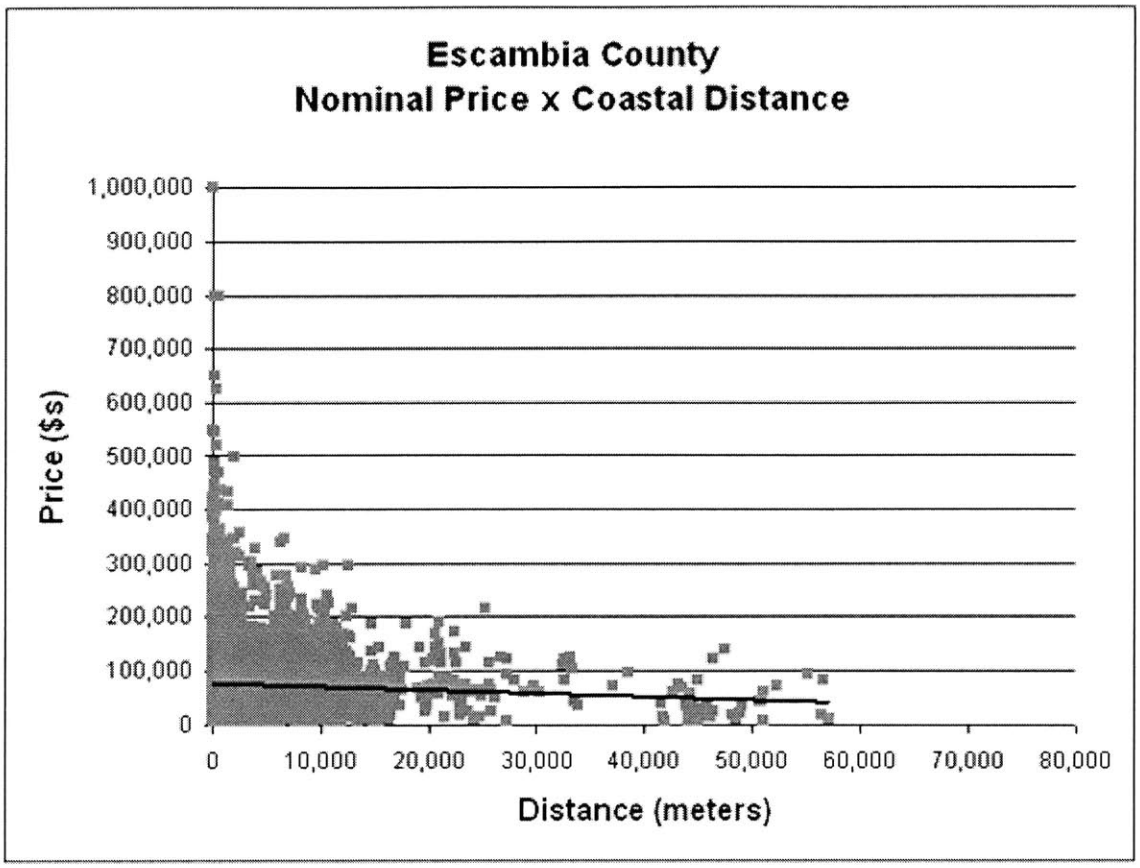
| *DESCRIPTIVE* | *YEAR 2* | *YEAR 1* | *PRICE 2* | *PRICE 1* | *DIST COASTAL* |
|---|---|---|---|---|---|
| Mean | 1994.91 | 1988.25 | 84147.78 | 68771.82 | 13639.41 |
| Standard Error | 0.04 | 0.05 | 325.61 | 313.12 | 97.17 |
| Median | 1997 | 1989 | 74400 | 60000 | 3197.73 |
| Mode | 2000 | 1988 | 65000 | 60000 | 1757.6 |
| Standard Deviation | 5.92 | 7.39 | 49632.81 | 47729.55 | 14811.91 |
| Sample Variance | 35.095 | 54.580 | 2463415478 | 2278109786 | 219392671 |
| Kurtosis | 0.47 | -0.70 | 66.92 | 125.83 | -1.66 |
| Skewness | -1.09 | -0.35 | 4.99 | 6.93 | 0.46 |
| Range | 28 | 32 | 1310000 | 1290000 | 43296 |
| Minimum | 1974 | 1970 | 10000 | 10000 | 2.05 |
| Maximum | 2002 | 2002 | 1320000 | 1300000 | 43298 |
| Sum | 46351682 | 46197049 | 1955173728 | 1597913339 | 316911788 |
| Count | 23235 | 23235 | 23235 | 23235 | 23235 |

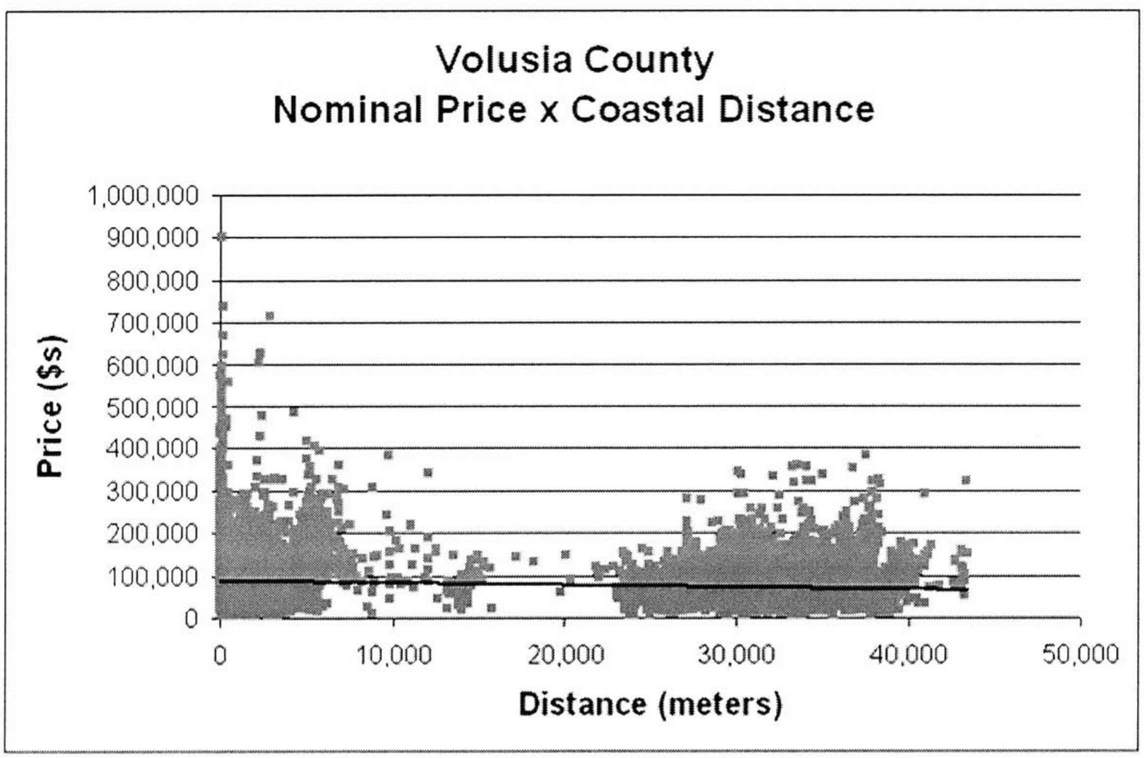
## Price/Distance Relationship

Few would dispute that waterfront property sells, ceteris paribus, at a price premium to inland property. Therefore, as a test of the data used in building the indices for this study, scatter plots of nominal sale prices by distance to the nearest coastal waterway were generated for each county. A trend line was added to each scatter plot to show the linear correlation between distance to the water and home price.


Dade County
Nominal Price x Coastal Distance
Price ($s)
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
0
5,000
10,000
15,000
20,000
25,000
Distance (meters)


Lee County
Nominal Price x Coastal Distance
Price ($s)
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
0
5,000
10,000
15,000
20,000
25,000
30,000
Distance (meters)


Escambia County
Nominal Price x Coastal Distance
Price ($s)
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
0
10,000
20,000
30,000
40,000
50,000
60,000
70,000
80,000
Distance (meters)

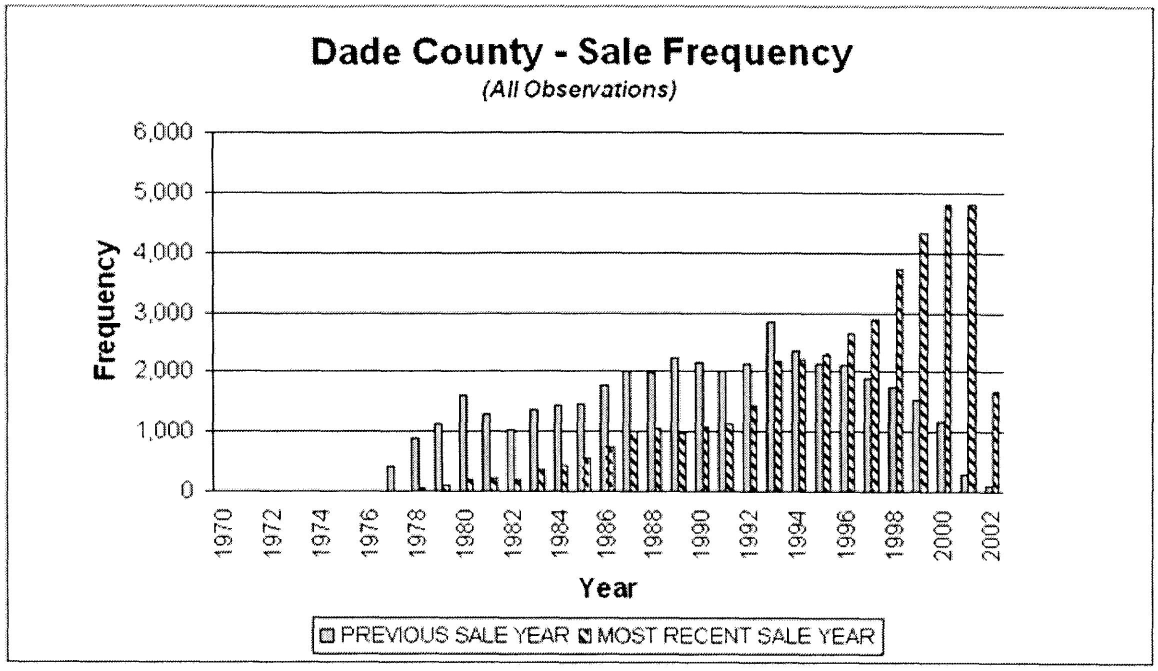

Volusia County
Nominal Price x Coastal Distance
Price ($s)
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
0
10,000
20,000
30,000
40,000
50,000
Distance (meters)

From these scatter plot graphs, it is apparent that the data used for this study exhibits the expected price premium associated with home proximity to the coastal water.

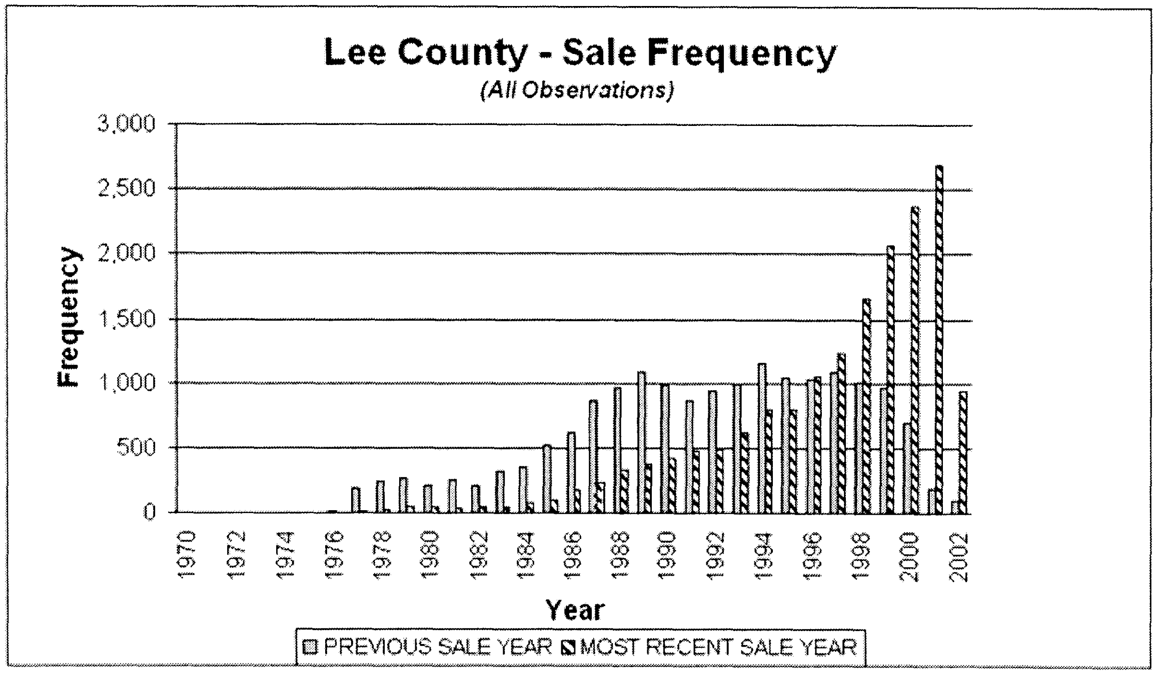
## Transaction Frequency, Random Noise, & Base Year Selection

Random noise is defined as the estimation error in the coefficients estimated in an OLS regression; for this study, the estimation error is the error in estimation of the period-by-period price changes. It is important to understand the potential impact of such estimation errors on the results and findings of this study. Estimation errors are a result of statistical outliers and can potentially skew the study results. The effects of random noise can be particularly pronounced in small samples; with greater sample size, the impact of random noise is diminished.[16] This is an important consideration, because the transaction frequency varies for this study throughout the study period. The bar charts below show the transaction frequency for the four counties studied and for a combined four county dataset. The solid bar depicts the number of first sales ($P_1$), labeled PREVIOUS SALE YEAR, in a given year; the striped bar depicts the number of second sales ($P_2$), labeled MOST RECENT SALE YEAR. See Appendix II for a numerical breakdown of the annual sale frequencies depicted in these charts.

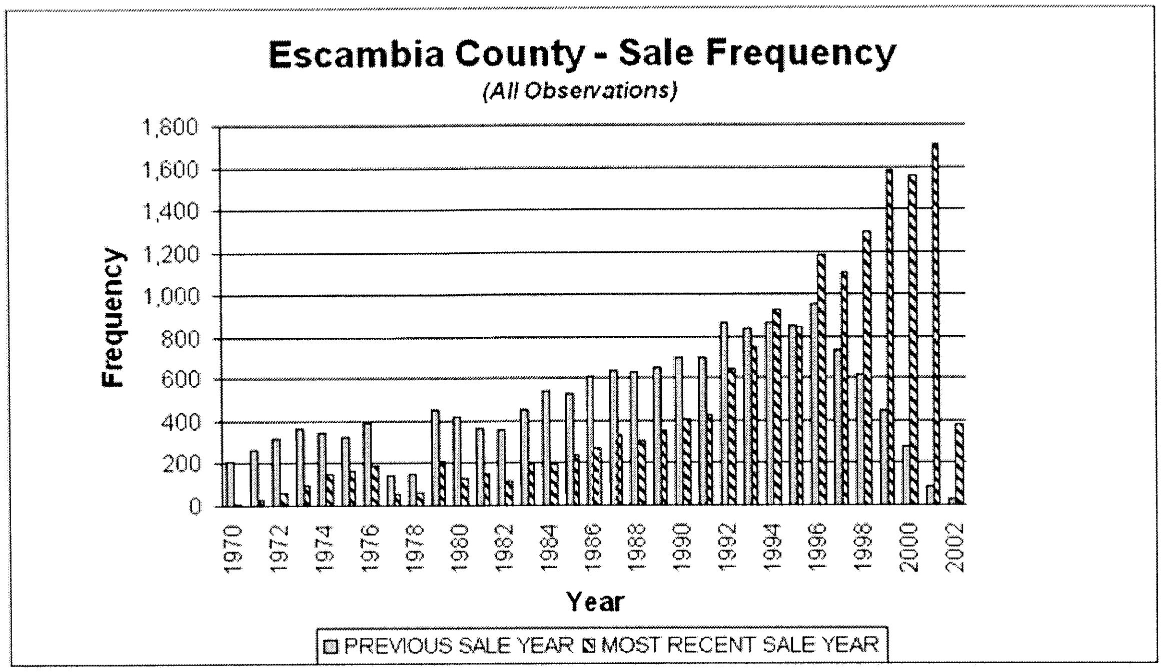
[16] Square-root of "n" rule. The greater the sample size, the less the effect of outliers (random noise).

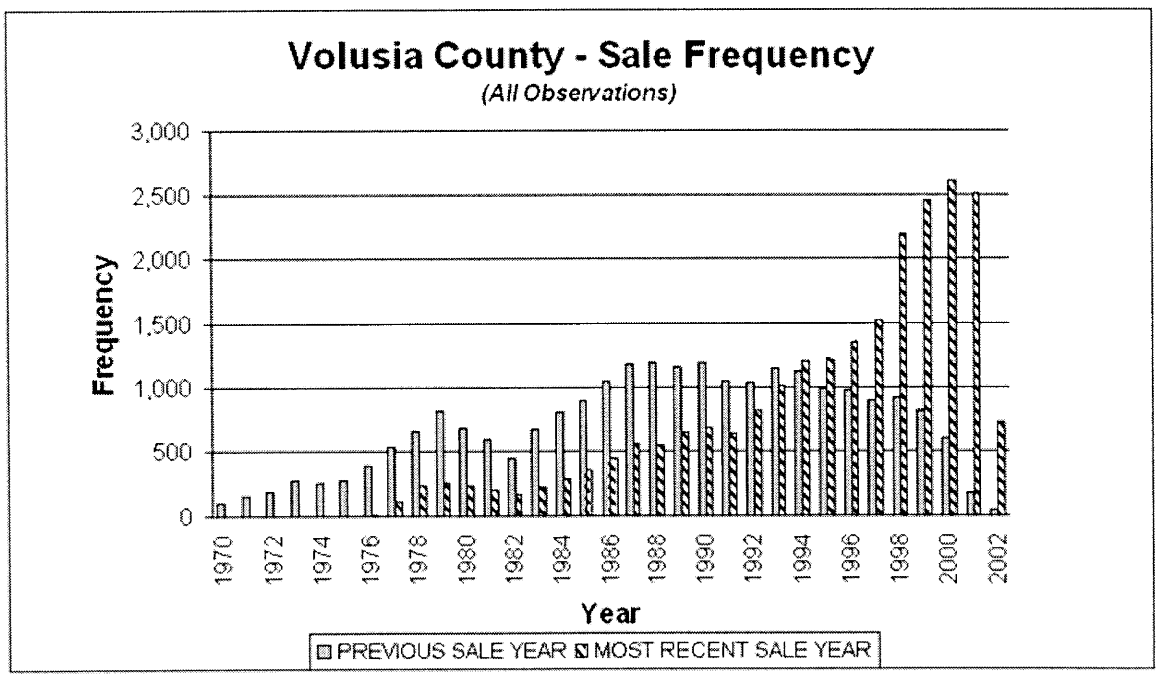


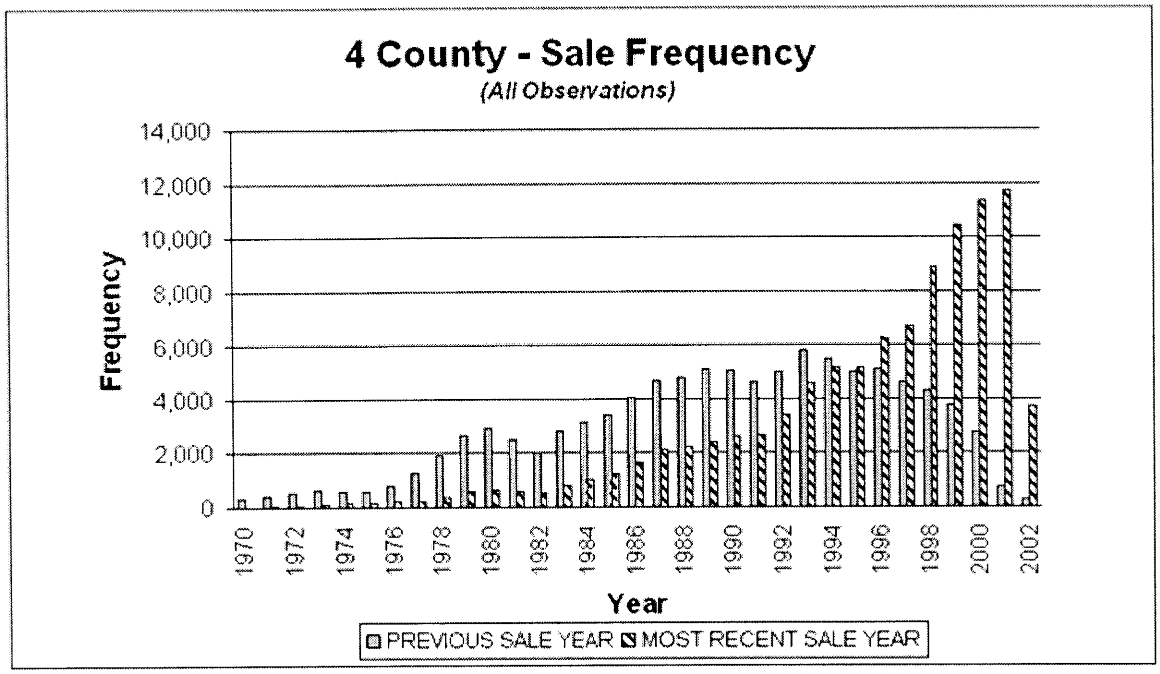
Dade County - Sale Frequency
(All Observations)
6,000
5,000
4,000
3,000
2,000
1,000
0
Frequency
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
Year
PREVIOUS SALE YEAR
MOST RECENT SALE YEAR

Lee County - Sale Frequency
(All Observations)
3,000
2,500
2,000
1,500
1,000
500
0
Frequency
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
Year
PREVIOUS SALE YEAR
MOST RECENT SALE YEAR


Escambia County - Sale Frequency
(All Observations)
Frequency
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
Year
PREVIOUS SALE YEAR
MOST RECENT SALE YEAR


Volusia County - Sale Frequency
(All Observations)
Frequency
3,000
2,500
2,000
1,500
1,000
500
0
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
Year
PREVIOUS SALE YEAR
MOST RECENT SALE YEAR




It is apparent from these bar charts that the dataset contains far fewer transactions in the early to mid-1970s. The data scarcity in the early years will likely impact the RSR results, but such an impact can be accounted for and corrected.

It is important to consider the impact of random noise and the decisions made regarding index base year selection for this study. The bar charts above show relative sale infrequency in the early years of the study period; furthermore, the charts also show no transactions in Dade County or Lee County prior to 1977. Weighing these findings, the decision was made for the purposes of consistency, comparability, and empirical rigor to use 1977 as the base year for the RSR analyses. The periods of reduced sale frequency (data scarcity) have little affect on the first moment index or trend levels.[17] The data scarcity does however impact the second moment price changes or volatility.[18] Small sample sizes are more subjected to the impact of "random noise" (estimation error);

[17] Geltner G. and N. Miller, Commercial Real Estate Analysis and Investments, p.657. Random noise does not change the expected value of the periodic returns because the expected value of both $\varepsilon_t$ and $\varepsilon_{t-1}$ is zero.
[18] Ibid., p.657. Random noise does change the volatility of the periodic returns; the noise increases the volatility thus making the typical saw tooth pattern of price changes.

evoking the statistical square-root of "n" rule, the greater the sample size, the less "random noise" in the results. Therefore, low frequency years of this study, the noisy parts, are useful in building the long-run price indices but tend to skew the volatility analysis.

To correct for the volatility differences attributable to random noise, a statistical technique, suggested by Geltner and Miller (2001), was used to filter out the random noise and to present a more realistic view of the home price volatility. The technique used to obtain measurements of unbiased volatility is based on the understanding that random noise ($\varepsilon$) is purely random and is uncorrelated with either the true or estimated price changes.[19] The error term associated with each estimated price change coefficient was first squared and then an average was taken. The average error variance is indicated by the greek symbol "eta" or $\eta$. The actual variance of the coefficients or **VAR(r)** was next calculated. $\eta$ was then subtracted from **VAR(r)** to yield the unbiased variance or **VAR(ř)** of the estimated coefficients. The square root of **VAR(r)** is the estimated standard deviation and the square root of **VAR(ř)** is the unbiased standard deviation. Both measures of standard deviation are reported in this study. The unbiased standard deviation, is considered to be a far more realistic estimate for comparing standard deviation (volatility) across samples, because it removes much of the random noise resulting from small sample size.

A final statistical issue relating to sale frequency must be mentioned. When examining the results, one must recall that only the two most recent sales transactions for each home were used in estimating the repeat-sales indices. Further, certain types of homes sell more frequently; these higher sale frequency homes are thus more heavily weighted in the later years of the study.[20] No correction was used, but it is a fact to be considered when reviewing the results of this study.

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[19] Ibid., p.658 footnote 3.

[20] Case, B., H. Pollakowski, and S. Wachter, (1997). "Frequency of Transaction and House Price Modeling," *The Journal of Real Estate Finance and Economics*, Vol. 14 (1-2). p.183.

## Arithmetic v. Geometric Returns

A final technical consideration is that of arithmetic versus geometric returns. The returns calculated with the RSR specification used for this study are geometric cross-sectional returns as opposed to the more widely used arithmetic time-series returns. An arithmetic RSR can be run but it is more complex and has its own host of problems.[21] The use of a geometric mean versus an arithmetic mean acts to slightly downwardly bias the return estimations. The return estimates in this study are converted into arithmetic returns in order to provide a like-comparison with other asset indices.

The arithmetic conversion method makes use a conversion approximation described by Goetzmann (1992).[22] The basic conversion formula is:

**AR = GR + VAR/2**

The **AR** is the arithmetic return for which one is trying to solve. **GR** is the geometric mean return and **VAR/2** is the variance of the RSR estimated return coefficients divided by two. The conversion approximation uses an assumed cross-sectional standard deviation of 5% or a VAR equal to 0.05^(1/2). The 5% estimation is based upon the typical magnitude of non-temporal transaction noise found in studies of housing rents.[23]

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[21] For more information on the Arithmetic RSR specification see – Shiller R., (1991). "Arithmetic Repeat Sales Price Estimators," *Journal of Housing Economics*. Vol 1: 110-126.
[22] Goetzman, W., (1992). "The Accuracy of Real Estate Indexes: Repeat Sales Estimators," *Journal of Real Estate Finance and Economics*, Vol. 5: 5-54.
[23] Geltner, G. and D. Gatzlaff, "A Transaction-Based Index of Commercial Property and its Comparison to the NCREIF index," p.12-13 footnote 16

# RESULTS & FINDINGS

This study is an applied test of the classic capital markets risk/return relationship to the single-family home market. The study quantitatively examines the relative price appreciation (return) and changes (risk) of waterfront and inland owner-occupied single family homes over the period 1977-2002. Return is the average annual price appreciation over the study period. Risk is the price volatility or standard deviation around the mean return. The capital markets relationship between risk and return is typically quite simple, the riskier the investment, the greater should be the expected return, ceteris paribus.

Treating coastal waterfront property as a unique asset class, its risk and investment performance is measured over time and compared with that of inland property to determine the potential existence of a "mispricing" in the property market. The null hypothesis assumes returns on waterfront property and inland property will adhere to the classic capital market risk/return relationship. The alternate hypothesis assumes an irregular relationship between the return on waterfront property and its observable risk.

In order to test these hypotheses, a paired repeat-sales transaction database, including 97,531 homes across four Florida waterfront counties was generated.[24] The four counties selected, and their respective Metropolitan Statistical Areas ("MSAs"), are Dade County (Miami), Lee County (Ft. Myers), Escambia County (Pensacola), and Volusia County (Daytona). Florida was selected due to its vast coastline and rich data sources. The four counties selected represent a geographically and demographically diverse grouping; all four counties also have significant coastal frontage, a criterion of central concern in this study.

To isolate and compare the price appreciation and changes of the single-family homes over time and with respect to distance to the nearest coastal water,

[24] See the Methodology section of this study for a detailed description of the data source and data screening process employed. Each home includes the most recent two sales transactions; therefore it is considered a "paired" repeat-sales transaction database.

the data was divided into five distance groups: 1) Waterfront (0-250 meters); 2) Water Access (251-500 meters); 3) Transition (501-2500 meters); 4) Inland (2501-Maximum meters); and 5) All homes (0-Maximum meters).

A repeat-sales regression ("RSR") was run for each of the five distance groups within each of the four counties.[25] The RSR coefficients are estimates of the period-by-period percentage home price changes. From these home price change estimates, indices were created. The indices were constructed by first determining the accumulated log levels (continuously compounded returns) for each period; these levels are defined as the sum of all coefficients prior to and including the specified year. Once the accumulated log level for each period was determined, a straight level index ("INDEX") or annual wealth relative was generated for each period. The INDEX is equal to the exponentiated log of the accumulated log level for the specified period. See Appendix III for the regression output summaries including the price change coefficients and INDEX levels.

The results and findings of this study are best estimates. The study employs advanced and accepted econometric techniques in estimating the relative risk and return of waterfront and inland homes. Certain statistical corrections, discussed in detail in the Statistical Analysis section of this study, have been made in order to present the most honest estimates of the actual investment performances. To correct for the volatility or risk differences attributable to random noise (estimation error), a noise filter was applied to the return estimates in order to present a more realistic view of the home price volatility.[26] Two measures of standard deviation are reported in this study—

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[25] The RSR specification used for this study was drawn from Gatzlaff and Geltner (1998). The simplified regression equation is defined as: $\mathbf{Y} = \beta \mathbf{D_t} + \varepsilon$. **Y** is a column vector equal to the natural log of the most recent sales price divided by the previous sales price or $\mathbf{ln(P_2/P_1)}$. $\beta$ is a column vector of the period-by-period home price changes estimated by the regression. $\mathbf{D_t}$ is the dummy variable matrix—rows correspond to the transaction price and columns correspond to the transaction year—for each time period; the dummy variable equals one for all years between the two transaction years and zero for all other years. $\varepsilon$ is a column vector of the error term in the regression. No constant term is used.

[26] The statistical technique used to obtain measurements of unbiased volatility is based on the understanding that random noise ($\varepsilon$) is purely random and is uncorrelated with either the true or estimated price changes. The error term associated with each estimated price change coefficient

estimated standard deviation and unbiased standard deviation. The estimated standard deviation is that which is estimated through the RSR; this measure is biased by sample size. The unbiased standard deviation is considered to be a more robust estimate for comparing standard deviations (volatility) across samples, because it removes much of the random noise resulting from small sample size. The returns calculated with the RSR specification used for this study are geometric cross-sectional returns as opposed to the more widely used arithmetic time-series returns. In order to provide a like-comparison with other indices, the return estimates have been converted into arithmetic means.[27] The estimates are best estimates of the actual investment performances, but it must be remembered when reviewing the results that not all of the effects of varying sample size can be controlled.

This study examines the average performance of waterfront and inland homes. After a thorough review of the results, it is apparent that the home price gains in 2001 and 2002 (especially for the waterfront homes) are not average. What makes the 2001 and 2002 price boom strikingly different from the price run-up of the late-1970s is the relationship to inflation. During the late-1970s, the United States ("U.S.") Economy was subjected to hyperinflation (by U.S. standards) and the home market followed suit; the price gains, although nominally substantial, were relatively average real gains. In stark contrast, the U.S. Economy in 2001 and 2002 experienced historically low inflation but the home market realized substantial nominal and real gains. The unprecedented home market peak, fueled in part by historically low borrowing rates and a "flight to quality" driven by the faltering equity market, is of historical importance and is

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was first squared and then an average was taken. The average error variance is indicated by η. The actual variance of the coefficients or VAR(r) was next calculated. η was then subtracted from VAR(r) to yield the unbiased variance or VAR(ř) of the estimated coefficients. The square root of VAR(r) is the estimated standard deviation and the square root of VAR(ř) is the unbiased standard deviation

[27] The arithmetic conversion method uses an approximation described by Goetzmann (1992). The conversion formula is: **AR = GR + VAR/2.** The **AR** is the arithmetic return for which one is trying to solve. **GR** is the geometric mean return and **VAR/2** is the variance of the RSR estimated return coefficients divided by two. The conversion approximation uses an assumed cross-sectional standard deviation of 5% or a VAR equal to 0.05^(1/2). The 5% estimation is based upon the typical magnitude of non-temporal transaction noise found in studies of housing rents.

included in this study. For purposes of comparison, and in an effort to present an analysis of the typical or average home price performances, the results from 1977-2000 are presented side-by-side with those from 1977-2002 in the County Results section below. This study examines the average risk and return relationship of waterfront and inland single-family homes. Therefore, the results for 1977-2000 are considered to be and are presented as the average performance results. The subsequent sections present the results and findings for the period 1977-2000.

The results of the RSRs are organized into five sections. The first section presents the constructed price indices and compares the relative risk/return performance of the Waterfront, Water Access, and Inland indices within each county. Risk/Return Analysis summarizes these results across counties and draws conclusions regarding the results' adherence to the classic capital markets risk/return relationship. Price Change Cross-Correlation examines the correlated price movements across the distance groups to determine price co-movement over time and distance to the water. County Performance Comparison compares the performance of the four counties over the study the period. Real Returns examines and compares the real investment returns yielded by the Waterfront, Water Access, and Inland single-family homes. For reasons of presentation clarity, only the results and findings for the Waterfront, Water Access, and Inland distance groups are included. The other two groups, Transition (501-2500 meters) and All observations (0-Maximum meters), exhibited very similar results to the Inland group.

## County Results

Twenty-five year (1977-2002) price indices and volatility charts were generated for each county. A dashed vertical line indicates year end 2000. Risk/return relationship plots illustrating the average annual measures of risk and return were generated for the periods 1977-2000 and 1977-2002.

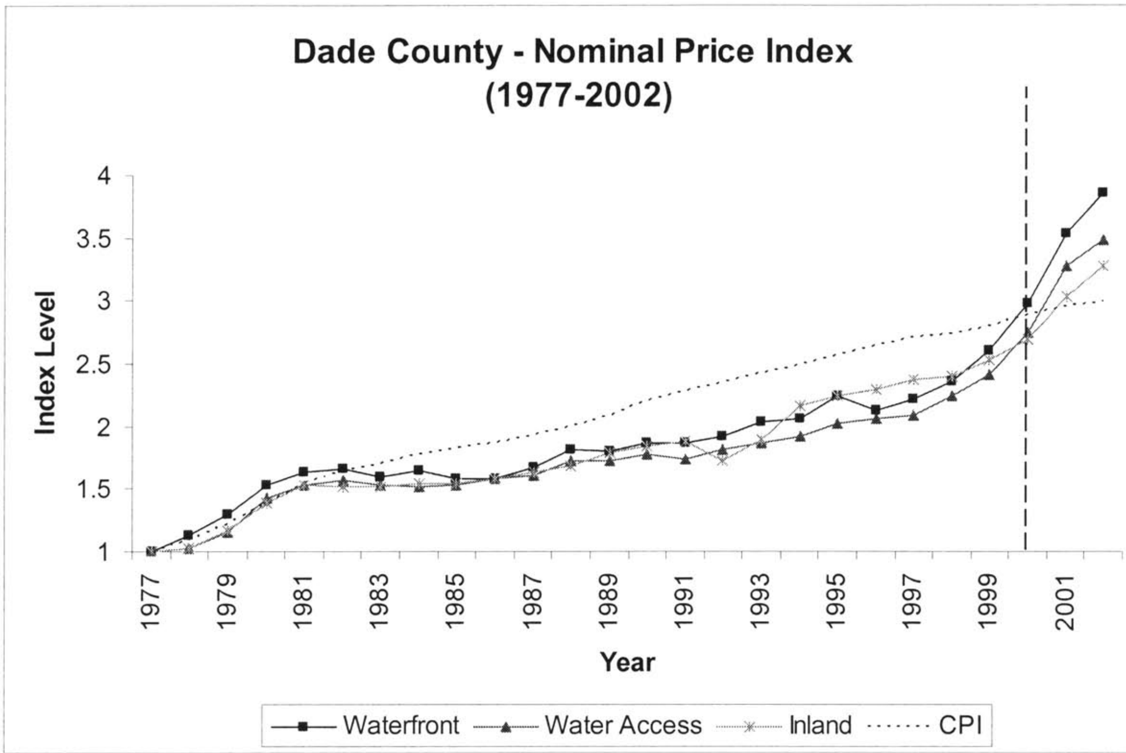
The nominal price indices illustrate the long-run price appreciation of Waterfront, Water Access, and Inland homes relative to the Southeastern U.S. Consumer Price Index ("CPI") over the period of the study. The indices, as described in detail in the Methodology section of this study, are straight level indices or annual wealth relatives generated from the period-by-period price change coefficients estimated through the RSRs. The index level was arbitrarily set to a value of 1.0 as of the end of 1977. Inflation adjusted or real price indices are included in Appendix IV.

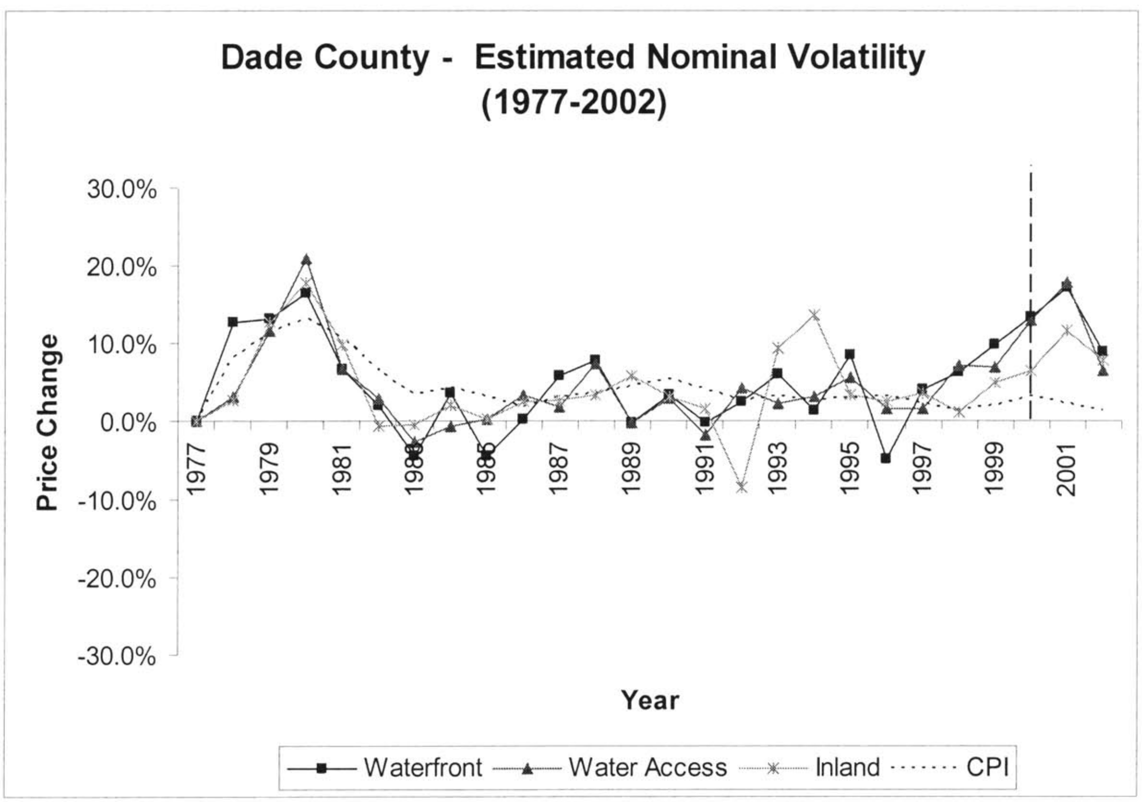
The nominal volatility charts exhibit the annual price change of waterfront and inland properties within each county. The period-by-period price change data, used to create the charts, is a graphical representation of the coefficients estimated through the RSRs. The volatility charts present the estimated volatility (standard deviation) of the coefficients; the unbiased standard deviation was calculated from the coefficient estimates and error terms using a random noise correction method described in the Statistical Analysis section of this study. Inflation adjusted volatility charts are included in Appendix IV.

The risk/return relationship plots illustrate the performance of Waterfront, Water Access, and Inland properties by summarizing the annual risk and return averages. These plots consist of average annual unbiased standard deviation (risk) plotted on the x-axis and average annual nominal mean appreciation (return) plotted on the y-axis. Two plots are presented for each county, one for the time period 1977-2000 and the other for the time period 1977-2002. For the purposes of comparison, risk/return relationship plots with estimated volatility are included in Appendix V.

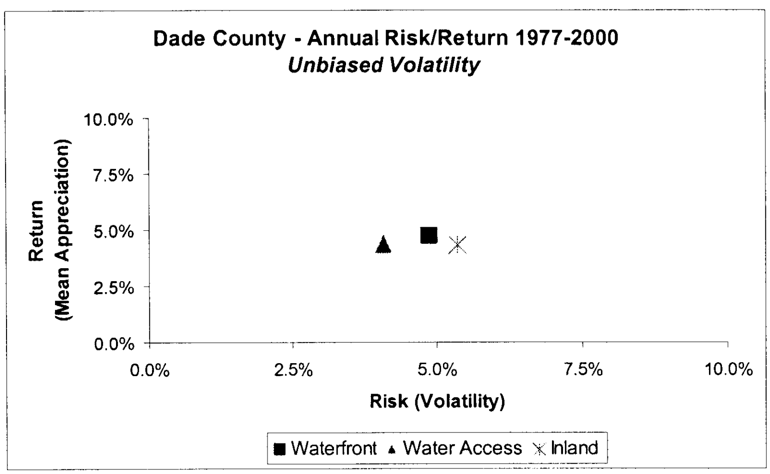
The price index, volatility chart, and risk/return relationship plots for Waterfront, Water Access, and Inland homes over the periods 1977-2000 and 1977-2002 are grouped by county and presented below. Please note the scale of the axis for each type of graph is consistent across counties so as to facilitate comparison. See Appendix VI for graphical representations and index values and volatilities for all five distance groups.

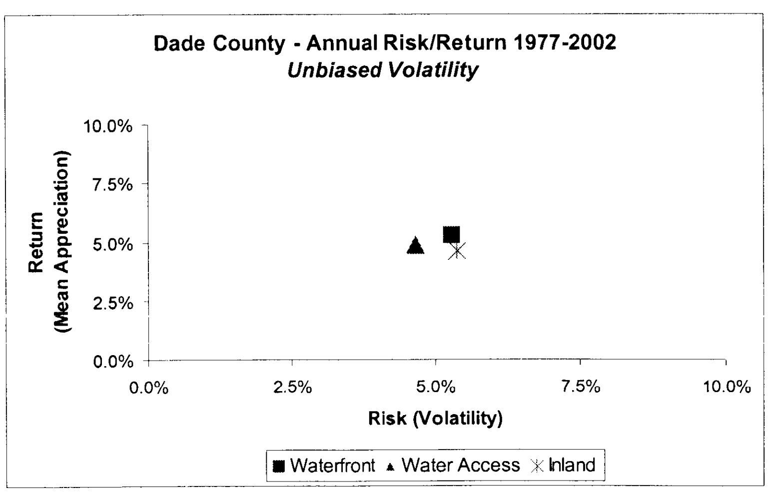
## Dade County (Miami)



The three Dade County home price indices display relatively uniform growth patterns over the twenty-five year study period. The general growth trend is steady upward movement for all three groups, with the greatest price acceleration in the late-1970s and again from 1997 through 2002. A shallow dip in all three indices is visible through the mid-1980s economic slowdown. The early 1990s recessionary period displays a different pattern. The recession appears to have had only a minor impact on Waterfront and Water Access homes, but it had a relatively larger downward price impact on Inland homes. In 1995 and 1996, all three groups again experienced slow growth, with the Waterfront index experiencing real losses. All three indices show substantial real gains in 2001 and 2002 with the Waterfront index growing at a slightly higher rate than the Water Access index.



Dade County Performance Measures

| Waterfront | 1977 - 2000 | 1977 - 2002 | % Change* |
|---|---|---|---|
| MEAN | 4.74% | 5.40% | 14.03% |
| MEDIAN | 4.05% | 5.70% | 40.91% |
| Estimated STDEV | 5.89% | 6.21% | 5.42% |
| Unbiased STDEV | 4.89% | 5.31% | 8.60% |

| Water Access | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 4.38% | 5.00% | 13.99% |
| MEDIAN | 3.08% | 3.10% | 0.77% |
| Estimated STDEV | 5.29% | 5.73% | 8.25% |
| Unbiased STDEV | 4.10% | 4.69% | 14.23% |

| Inland | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 4.31% | 4.75% | 10.10% |
| MEDIAN | 3.18% | 3.28% | 3.23% |
| Estimated STDEV | 5.49% | 5.50% | 0.07% |
| Unbiased STDEV | 5.37% | 5.38% | 0.15% |

| RSR Stats | Waterfront | Water Access | Inland |
|---|---|---|---|
| Observations | 2447 | 9,983 | 26,855 |
| Transactions | 4894 | 19,966 | 53,710 |
| R-Square | 61.62% | 63.04% | 46.11% |
| Adj R-Square | 61.23% | 62.50% | 46.06% |

**percentage change in calculations from 1977-2000 to 1977-2002.*

The Dade County Waterfront index has consistently outperformed the Water Access and Inland indices. Over the period 1977-2000 an average annual return of 4.74% for the Waterfront, relative to 4.38% and 4.31% respectively for the Water Access and Inland; the depicted long-run price index illustrates Waterfront's dominate returns.[28] Waterfront homes returned an average annual 43 basis point premium over Inland homes from 1977-2000 and a premium of 65 basis points including the years 2001 and 2002.

The 1977-2000 and 1977-2002 Unbiased Volatility Risk/Return Plots illustrate similar performance results. The Waterfront index yields the highest return with a slightly lower level of risk than the Inland index. The investment in

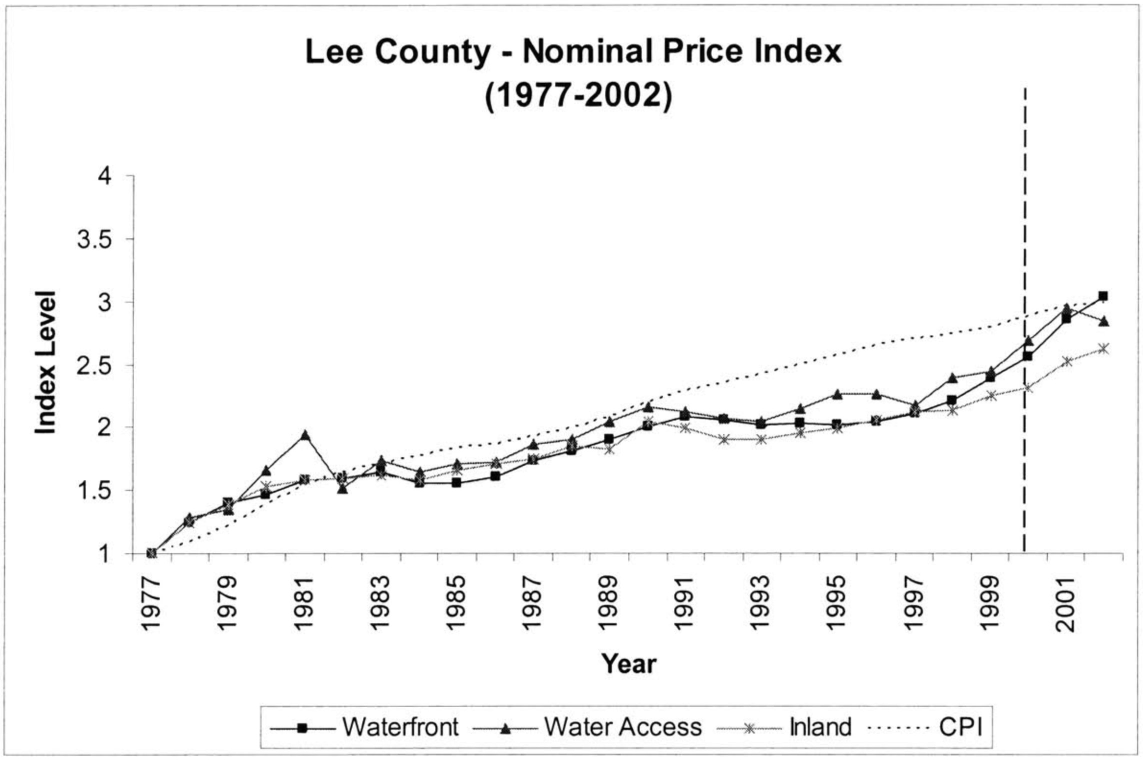
[28] For purposes of comparison, the capital appreciation component of the S&P 500 Index averaged a 12.90% annual rate of return and a 13.40% volatility level over the period 1977-2000. Over the same time period, the capital appreciation component of the 30 Year U.S. Treasury Bond averaged a 1.73% annual rate of return and a 12.37% volatility level.

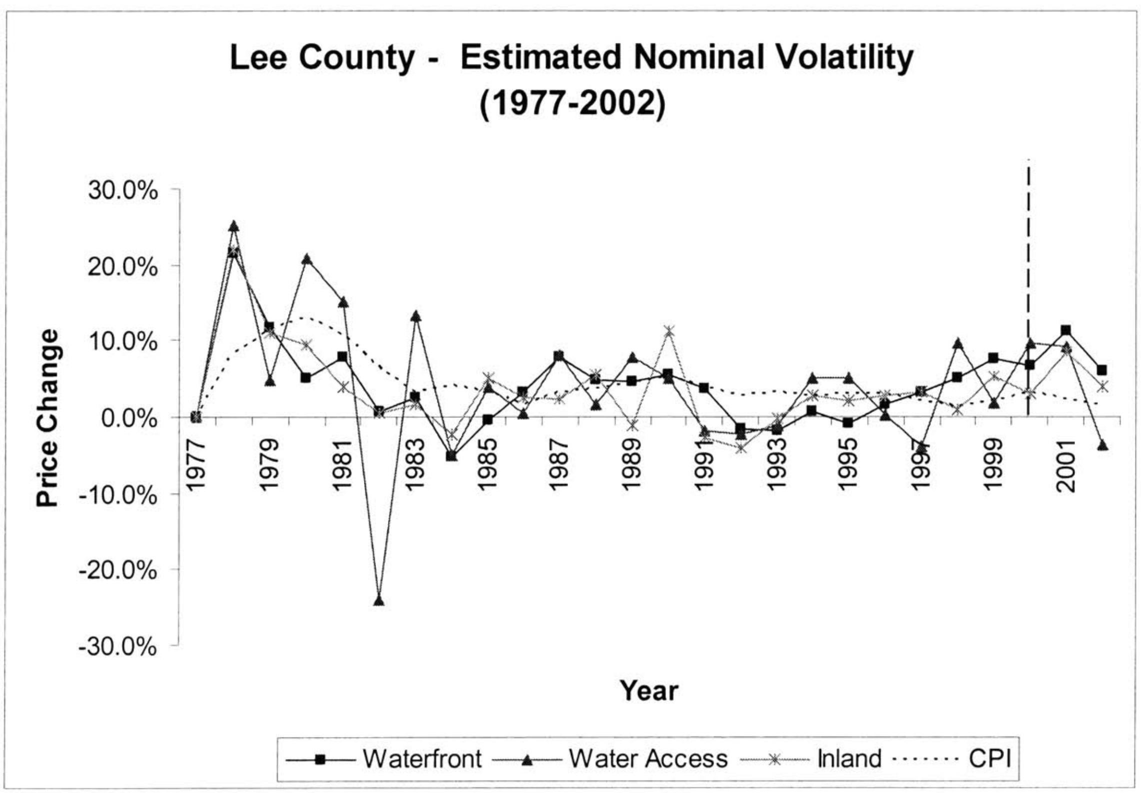
Waterfront is said to dominate the investment in Inland because Waterfront yields a higher return at a lower level of risk. This relationship is in contradiction to the classic capital markets risk/return relationship. The Water Access also delivers a higher return but at a significantly lower level of risk than the Inland; this relationship is also in opposition to the classic capital markets paradigm. In contrast, the Waterfront-Water Access relationship follows the classic relationship.

Including the years 2001 and 2002 in the analysis increases the average annual returns for all three distance groups in excess of 10% while increasing the average unbiased risk for Waterfront (8.60%) and Water Access (14.23%), but only increasing Inland risk by a mere 0.15%. These relative risk/return changes, when weighed with a careful review of the return estimates produced in the RSRs, indicate that the growth experienced by the Waterfront and Water Access indices in 2001 and 2002 is substantially greater than average. Both the Waterfront and Water Access price indices experience growth in excess of 17.0% in 2001 and an average growth rate of 12.0% for the combined two year period. The period from 1977-2000 presents an average or typical depiction of the long-run risk and return performances of Dade County.

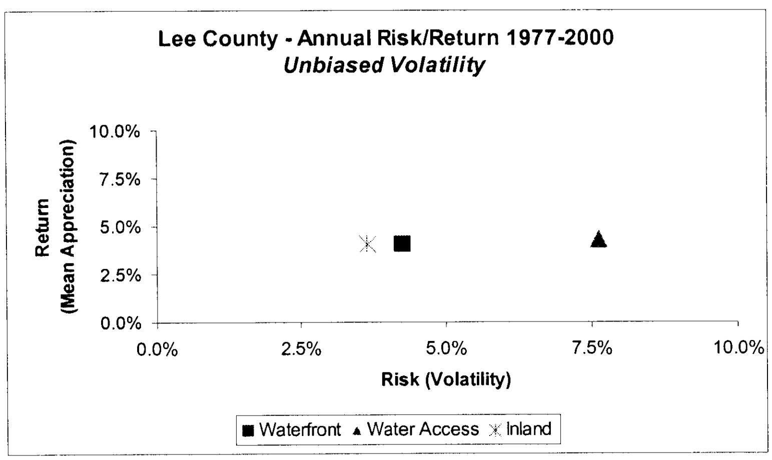
**The documented risk/return relationship of Dade County homes, using unbiased volatility measures, is an illustration of the alternate hypothesis: Waterfront and Water Access single-family homes in Dade County deliver higher, average long-run returns at lower levels of risk than Inland homes. The relationship between the Waterfront and Water Access homes follows the classic capital markets relationship.**

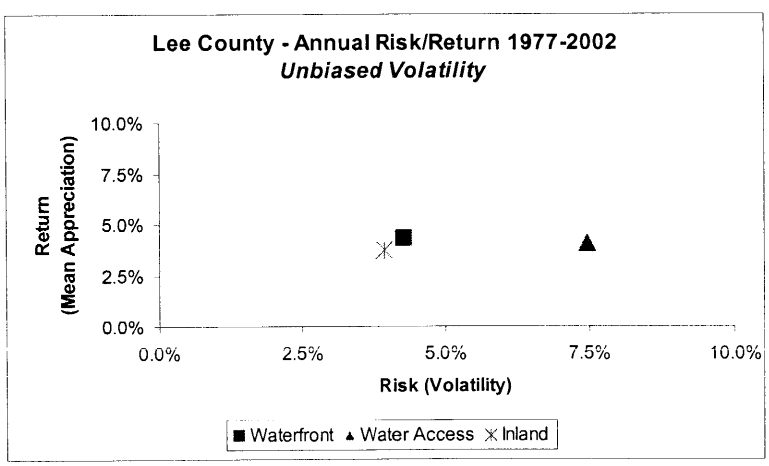
## Lee County (Ft. Myers)



The three Lee County home price indices display a less uniform or more uncorrelated growth pattern relative to Dade County over the twenty-five year period. The general growth trend parallels the CPI, with the greatest price acceleration in the late-1970s and again in the mid-1990s through 2002. A more pronounced dip, and real losses, in all three indices is visible as the inflationary period was quelled and the economy to slipped downward throughout the mid-1980s. The early-1990s recession appears to have had a significant impact on all three groups, with the greatest downward impact again on Inland homes. The Water Access and Inland homes rebounded starting in 1993 while the Waterfront homes stumbled again in 1995 before experiencing steady real growth acceleration through 2002. During the same time period, Water Access and Inland indices experienced less steady growth.



**Lee County Performance Measures**

| Waterfront | 1977 - 2000 | 1977 - 2002 | % Change* |
|---|---|---|---|
| MEAN | 4.08% | 4.44% | 8.98% |
| MEDIAN | 3.61% | 4.64% | 28.61% |
| Estimated STDEV | 5.40% | 5.38% | -0.39% |
| Unbiased STDEV | 4.27% | 4.30% | 0.82% |

| Water Access | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 4.30% | 4.18% | -2.86% |
| MEDIAN | 4.79% | 4.79% | 0.00% |
| Estimated STDEV | 9.79% | 9.57% | -2.29% |
| Unbiased STDEV | 7.63% | 7.45% | -2.36% |

| Inland | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 3.65% | 3.85% | 5.51% |
| MEDIAN | 2.63% | 2.70% | 2.57% |
| Estimated STDEV | 5.60% | 5.44% | -2.78% |
| Unbiased STDEV | 4.06% | 3.96% | -2.59% |

| RSR Stats | Waterfront | Water Access | Inland |
|---|---|---|---|
| Observations | 4,073 | 5,839 | 5,800 |
| Transactions | 8,146 | 11,678 | 11,600 |
| R-Square | 34.65% | 27.73% | 16.84% |
| Adj R-Square | 34.25% | 26.46% | 16.48% |

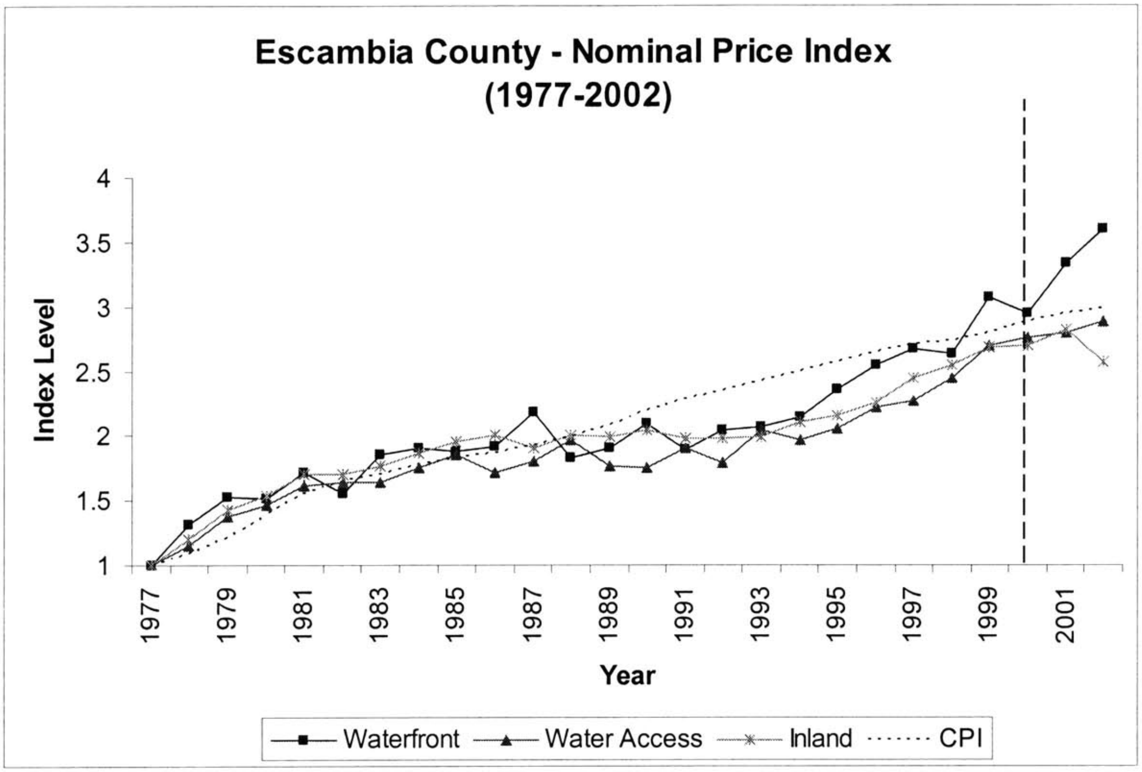
**percentage change in calculations from 1977-2000 to 1977-2002.*

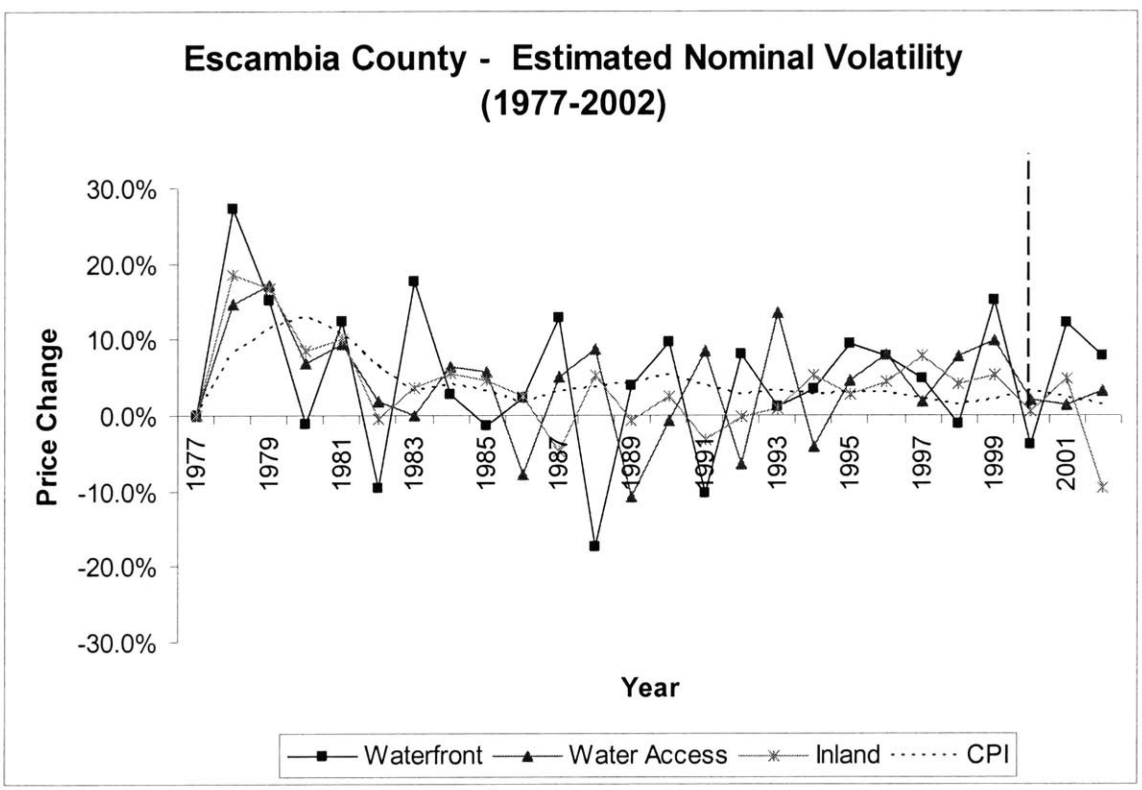
Lee County Waterfront homes yielded an average annual return of 4.08%, relative to 4.30% and 3.65% respectively for the Water Access and Inland homes from 1977-2000. Including 2001 and 2002 in the analysis, the average annual returns increase for Waterfront (4.44%) and Inland (3.85%) while decreasing for Water Access (4.18%). Caution must be exercised when interpreting the returns for the Water Access index. Much of the long-run advantage Water Access displays over Waterfront is attributable to the visible bubble in 1981. The investment performances are estimates; although generated using advanced and accepted statistical techniques, not all effects of random noise can be controlled. The relative value premium of Waterfront and Water Access homes over Inland homes is clear from the long-run price indices.

The two Unbiased Volatility Risk/Return Plots again depict relatively similar results. The Waterfront index delivers a higher return with a slightly higher level of risk than the Inland, thereby adhering to the classic capital markets risk/return relationship. The Water Access also delivers a higher return than the Inland, but at a significantly higher level of risk than both the Inland and Waterfront. Of curiosity is the relationship between the Waterfront and the Water Access and the significant volatility present in the Water Access returns. As discussed above, the relative return premium of Water Access over Waterfront over the period 1977-2000 is in large measure attributable to a 1981 bubble in Water Access. The noise filter was applied to all estimates yet the Water Access index displays an average risk level in excess of 300 basis points higher than the Waterfront and Inland indices. Some of this volatility may be attributable to unfiltered noise, but in great likelihood a significant portion of this volatility is genuine. Therefore, Water Access although delivering a higher average annual return than Waterfront from 1977-2000 and a slightly lower return from 1977-2002 does so with significantly more risk.

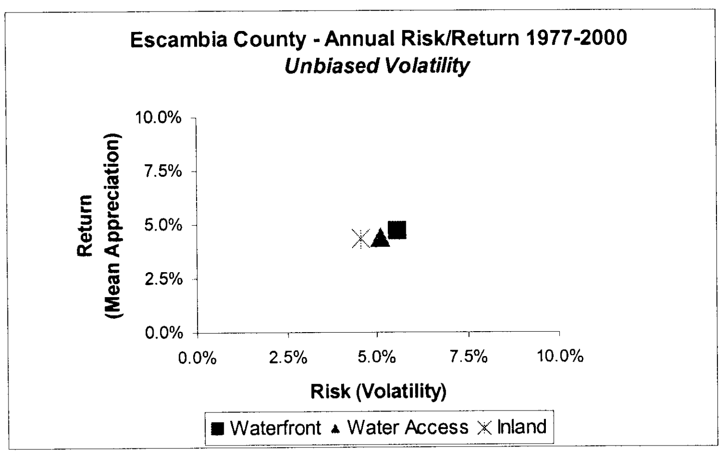
**The documented risk/return relationship, using unbiased volatility measures, between Waterfront and Inland homes in Lee County, abides by the classic capital markets risk/return relationship and thus is an illustration of the null hypothesis. The relationship between Waterfront and Water Access homes is an illustration of the alternate hypothesis; Waterfront homes yield comparable returns at significantly lower levels of risk than Water Access homes.**

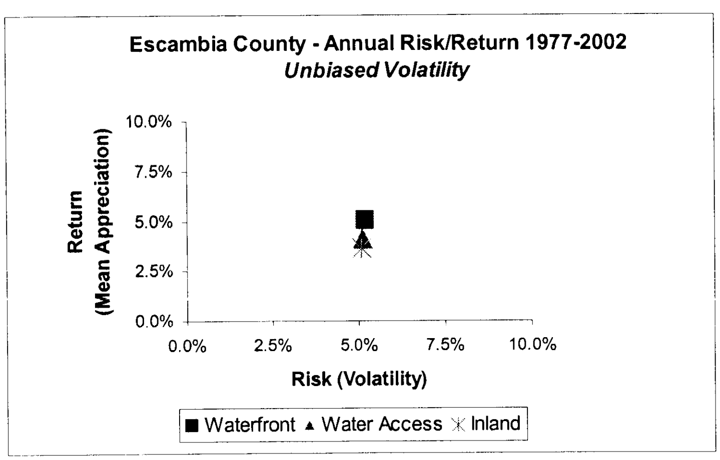
## Escambia County (Pensacola)



The three Escambia County home price indices, like the prior two counties, appear to pace the CPI over the study period except for punctuated periods of growth and decline. Again, the greatest price acceleration is seen in the late-1970s and in the mid-1990s. Examining the Price Index and Volatility Chart, one sees an interesting relationship not seen in the other counties. The Waterfront and Water Access price movements are rather volatile and appear uncorrelated. The charts present best estimates of volatility, yet the peculiar volatility may be more a function of the econometric technique and less the observed reality. Unlike the other two indices, the Inland index appears to smoothly climb throughout the study period. The mid-1980s slowdown had a visible impact on all three indices, with the Waterfront homes experiencing the greatest downward pressure. The early-1990s recession again sent Waterfront and Inland home prices down, but Water Access home prices rallied through the 1990-1991 period only to crack in 1992.



**Escambia County Performance Measures**

| Waterfront | 1977 - 2000 | 1977 - 2002 | % Change* |
|---|---|---|---|
| MEAN | 4.70% | 5.13% | 8.97% |
| MEDIAN | 3.95% | 4.79% | 21.47% |
| Estimated STDEV | 10.01% | 9.72% | -2.93% |
| Unbiased STDEV | 5.58% | 5.23% | -6.32% |

| Water Access | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 4.40% | 4.23% | -3.85% |
| MEDIAN | 5.75% | 4.96% | -13.81% |
| Estimated STDEV | 7.11% | 6.83% | -3.84% |
| Unbiased STDEV | 5.11% | 5.15% | 0.80% |

| Inland | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 4.31% | 3.77% | -12.49% |
| MEDIAN | 4.03% | 4.03% | 0.00% |
| Estimated STDEV | 5.49% | 5.95% | 8.28% |
| Unbiased STDEV | 4.55% | 5.09% | 12.00% |

| RSR Stats | Waterfront | Water Access | Inland |
|---|---|---|---|
| Observations | 959 | 6,294 | 7,660 |
| Transactions | 1918 | 12,588 | 15,320 |
| R-Square | 45.56% | 33.47% | 30.57% |
| Adj R-Square | 44.10% | 32.06% | 30.34% |

**percentage change in calculations from 1977-2000 to 1977-2002.*

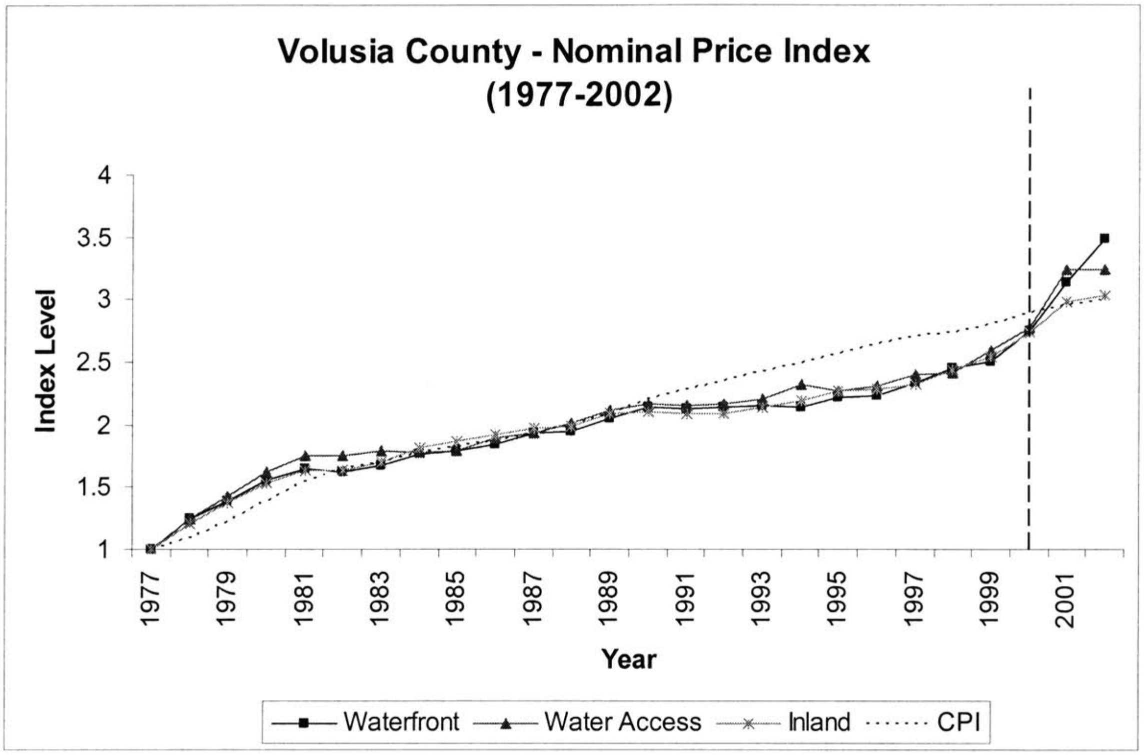
From 1977-2000, the Escambia County Waterfront homes, on average, yielded greater returns than the Water Access and Inland homes. The Waterfront homes averaged an annual return of 4.70%, relative to 4.40% for Water Access homes and 4.31% for Inland homes. The spread between Waterfront and the other two index groups widened in 2001 and 2002 with Waterfront growing at an average 9.98% over the two year period relative to 2.28% and -2.42% for Water Access and Inland respectively.

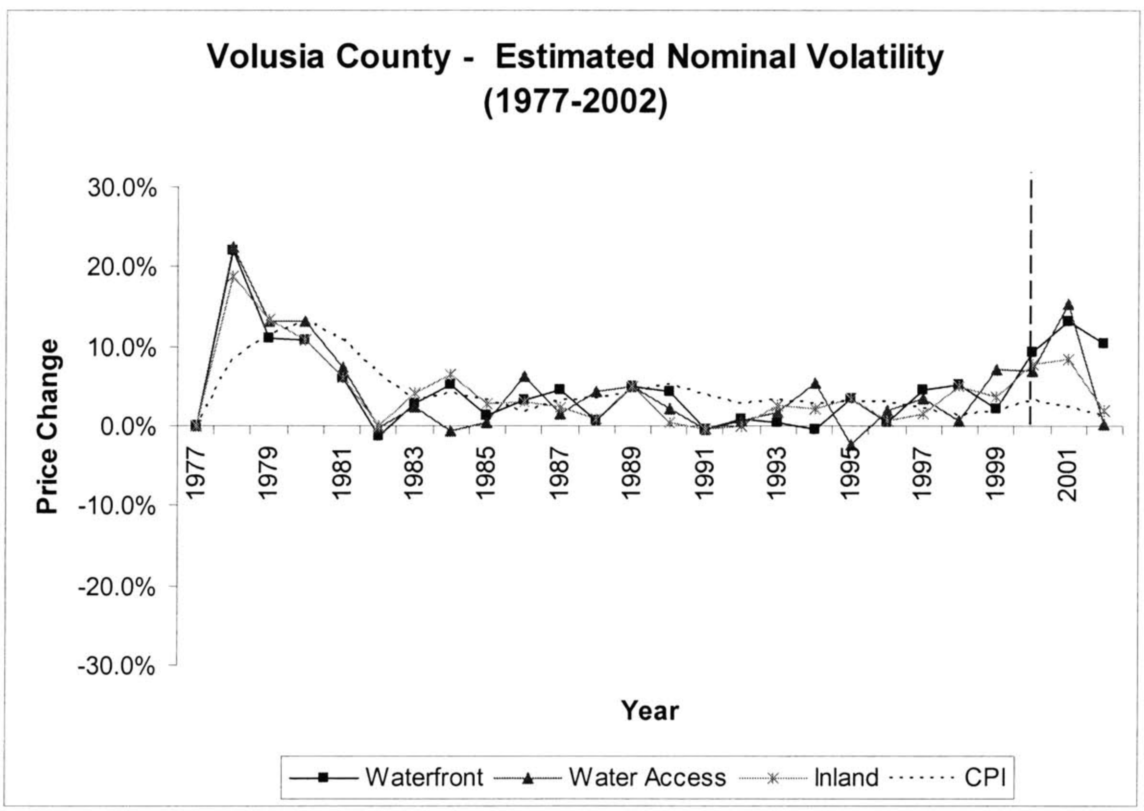
The Unbiased Volatility Risk/Return Plots for the two time periods show different risk/return relationships. Over the period 1977-2002 the unbiased volatilities exhibit a 14 basis point range between indices: Waterfront 5.23%, Water Access, 5.15%, and Inland 5.09%. The average return range over the same period is 136 basis points: Waterfront 5.13%, Water Access 4.23%, and Inland 3.77%. Although the risk/return relationship abides by the traditional capital markets paradigm, the narrow 14 basis point range in volatility is nearly imperceptible and questions the necessity of a 136 basis point return premium on Waterfront homes. Removing 2001 and 2002 from the analysis, the results change. The results, measured from 1977-2000, follow the classic capital markets risk/return relationship; each incremental increase in risk is compensated with an increase in return. The 14 basis point risk spread observed in the period 1977-2002 becomes 103 basis points when measured from 1977-2000: Waterfront 5.58%, Water Access 5.11%, and Inland 4.55%. Similarly, the 136 basis point return premium (1977-2002) reverts to a 39 basis points premium when measured from 1977-2000: Waterfront 4.70%, Water Access 4.40%, and Inland 4.31%.

The price growth of Waterfront in the years 2001 and 2002 is nearly double the long-run average annual rate of return, thereby increasing the average annual return measurement by 8.97%; over the same period, the Water Access and Inland indices annual return measurements were reduced by 3.85% and 12.49% respectively. The period from 1977-2000 is a more honest representation of the long-run average risk and return performances of Escambia County.

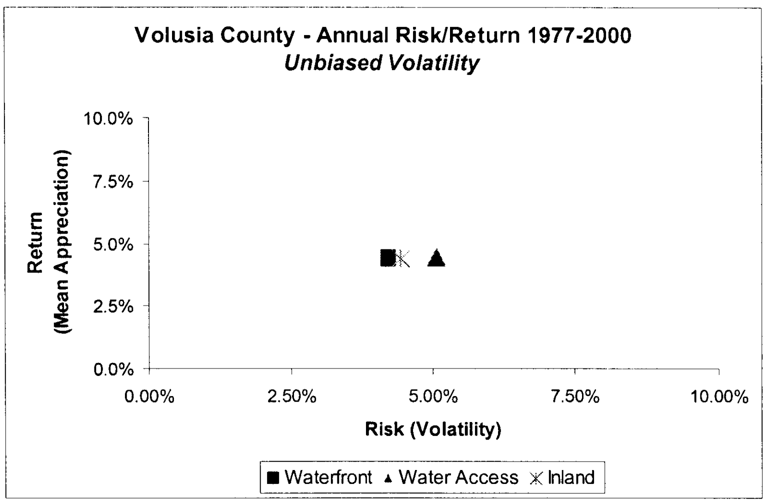
**The documented risk/return relationship from 1977-2000, using unbiased volatility measures, between Waterfront, Water Access, and Inland homes in Escambia County, abides by the classic capital markets risk/return relationship, illustrating the null hypothesis.**

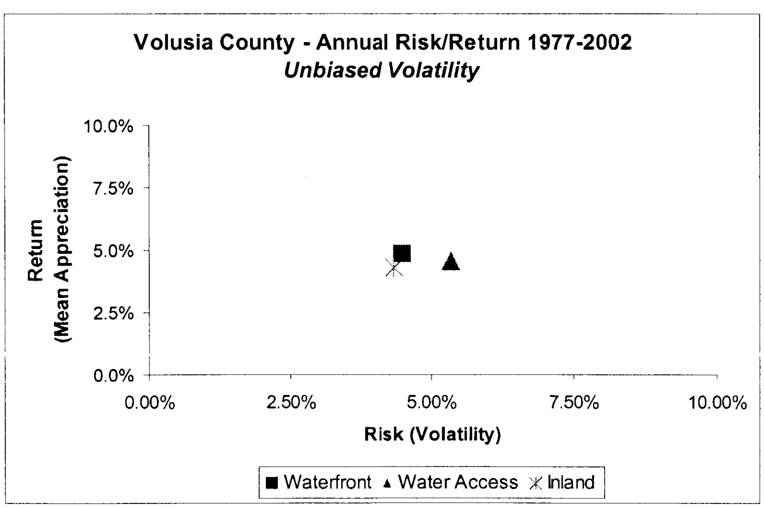
## Volusia County (Daytona)



In contrast with the uncorrelated price movements of Escambia County, the three Volusia County home price indices display the highest level of correlation relative to the other three counties. All three Volusia County indices steadily trend upward in near unison with the CPI over much of the twenty-five year period. Price growth is quite rapid in the late-1970s as all three home-indices climbed ahead of inflation. The next period of real price growth is seen in the late-1990s and the growth is exponentially accelerated in 2001 and 2002. The late-1990s price acceleration in Volusia County appears to have trailed the other three counties by two or three years. A slight dip in all three Volusia County indices is visible in the mid-1980s and with a stronger dip in the early-1990s.



**Volusia County Performance Measures**

| Waterfront | 1977 - 2000 | 1977 - 2002 | % Change* |
|---|---|---|---|
| MEAN | 4.40% | 4.99% | 13.45% |
| MEDIAN | 3.47% | 4.37% | 25.74% |
| STDEV | 5.14% | 5.34% | 4.01% |
| Unbiased STDEV | 4.25% | 4.51% | 6.00% |

| Water Access | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 4.43% | 4.70% | 5.98% |
| MEDIAN | 2.41% | 2.41% | 0.00% |
| STDEV | 5.63% | 5.89% | 4.65% |
| Unbiased STDEV | 5.07% | 5.35% | 5.60% |

| Inland | 1977 - 2000 | 1977 - 2002 | % Change |
|---|---|---|---|
| MEAN | 4.38% | 4.44% | 1.42% |
| MEDIAN | 3.07% | 3.07% | 0.00% |
| STDEV | 4.66% | 4.56% | -2.16% |
| Unbiased STDEV | 4.45% | 4.35% | -2.30% |

| RSR Stats | Waterfront | Water Access | Inland |
|---|---|---|---|
| Observations | 2168 | 5,677 | 12,934 |
| Transactions | 4336 | 11,354 | 25,868 |
| R-Square | 59.54% | 69.15% | 51.47% |
| Adj R-Square | 59.07% | 68.83% | 51.38% |

**percentage change in calculations from 1977-2000 to 1977-2002.*

The Volusia County Waterfront, Water Access, and Inland home indices show remarkably consistent and correlated growth. Over the period 1977-2000, Waterfront homes returned an average of 4.40%, relative to 4.43% and 3.38% respectively for the Water Access and Inland homes. Including the years 2001 and 2002 in the analysis, the average annual returns jump 13.45% for Waterfront (4.99%) in comparison with a change of 5.98% for Water Access (4.70%) and 1.42% for Inland (4.44%).

The average price growth of all three indices is above average in the years 2001 and 2002. The greatest growth is clearly seen in the Waterfront index which experienced an average growth rate of 11.79% over the two year period, more than double the long-run average annual rate of return. Over the same period, Water Access and Inland grew at annualized rates of 7.74% and

5.16% respectively. Thus, the 1977-2000 period represents the more typical long-run performance of Volusia County home prices.

The Unbiased Volatility Risk/Return Plots for the 1977-2000 and 1977-2002 show different risk/return relationships between the three Volusia County indices. Measured over the period 1977-2002, the Waterfront and Inland indices follow the classic capital markets relationship; conversely, the Waterfront-Water Access relationship, over the same period, does not adhere. Removing 2001 and 2002, from the analysis, the differences between the annual index returns are winnowed down to a tight 5 basis point range. Such an insignificant differential is considered nil for this study and thus all three average returns are treated as equal. In contrast, the risk spread is 84 basis points with Waterfront experiencing the lowest unbiased annual volatility: Waterfront 4.25%, Water Access 5.07%, and Inland 4.45%. In summary, Waterfront delivers equal returns at lower levels of risk than both Inland and Water Access. Thus a Waterfront investment dominates an investment in either Water Access or Inland.

**The documented risk/return relationship from 1977-2000, using unbiased volatility measures, between Waterfront, Water Access, and Inland homes is an illustration of the alternate hypothesis: Waterfront single-family homes in Volusia County deliver equal long-run returns at lower levels of risk than Water Access and Inland homes.**

## Risk/Return Analysis

To isolate and highlight the risk/return relationships between the various home price indices and across the four counties, risk/return premia matrices were created to compare the performance of Waterfront homes versus Inland homes and Waterfront homes versus Water Access homes. The results are presented for the time period 1977-2000. This period is considered to be a far more average or typical reflection of the investment performances. The home market, especially for waterfront homes, experienced unprecedented growth in the two year period, 2001-2002; consequently, the 2001 and 2002 results have been left out of this analysis so as to avoid skewing the long-run average investment performance measures. For comparison, risk/return premia matrices were prepared for the time period 1977-2002 and included in Appendix VII.

### Waterfront v. Inland Homes

**Waterfront v. Inland (1977-2000)**
***Waterfront Avg. Annual Risk/Return Premia (Basis Points)***

| | Risk | Return |
|---|---|---|
| Dade County | -48 | +43 |
| Lee County | +21 | +43 |
| Escambia County | +103 | +39 |
| Volusia County | -20 | +2 |

In all four counties, the Waterfront homes yielded higher or equal average returns than the Inland homes, as measured by average annual percentage return (arithmetic mean appreciation). The yield spreads range from 2 basis points for Volusia County to 43 basis points for Dade and Lee Counties; the 2 basis point spread is insignificant and the two returns in Volusia County are considered equal.

In both Lee County and Escambia County, the higher level of return for Waterfront homes was commensurate with the additional risk, vis-à-vis the Inland homes. The Waterfront-Inland risk/return relationship for these two counties is consistent with the classic capital markets relationship and thus supports the null hypothesis.

Conversely, the results for Dade County and Volusia County thoroughly support a rejection of the null hypothesis. The Dade County Waterfront homes not only provided an average annual 43 basis point premium return over the Inland homes, but also the Waterfront did so with 48 basis points less annual risk. The Volusia County Waterfront homes yielded a return equal to that of the Inland homes but with 20 basis points less risk. The Waterfront homes in Dade and Volusia counties yielded higher or equal returns at lower levels of risk than the Inland homes. The Waterfront homes in these counties represent potential arbitrage opportunities when compared with the price performance of Inland homes over the period 1977-2000.

## Waterfront v. Water Access Homes

**Waterfront v. Water Access (1977-2000)**
***Waterfront Avg. Annual Risk/Return Premia (Basis Points)***

| | Risk | Return |
|---|---|---|
| **Dade County** | +79 | +36 |
| **Lee County** | -336 | -22 |
| **Escambia County** | +47 | +30 |
| **Volusia County** | -82 | -3 |

In two of the four counties, the Waterfront homes delivered greater annual percentage returns than the Water Access homes as measured by capital appreciation. The estimated yield spread in Dade and Escambia Counties is 36 and 30 basis points respectively. The 3 basis point return difference between Waterfront and Water Access is considered insignificant and the two returns are considered equal. The Lee County Water Access index averaged a 22 basis point premium return over the Lee County Waterfront index, but it did so with significantly more risk.

The Waterfront-Water Access risk/return relationship for Dade and Escambia Counties is consistent with the classic capital markets relationship and thus supports the null hypothesis. The additional level of return for the

Waterfront homes is commensurate for the additional average risk, vis-à-vis Water Access homes.

In contrast, the performance results for both Lee and Volusia counties thoroughly support a rejection of the null hypothesis. The Lee County Waterfront index yielded a comparable 22 basis point lower average annual return than the Water Access index, but the Waterfront index did so with an estimated 336 basis points less annual risk. Although a noise filter was applied to all indices, not all the random noise can be effectively removed from the sample. As discussed in the prior section, random noise may help to explain some of the risk present in the Lee County volatility measure, but in great likelihood a significant portion of this volatility is genuine. Therefore, the Water Access index although delivering a higher average annual return than the Waterfront index does so with significantly more risk. The Volusia County Waterfront index yielded an equal level of return with an 82 basis point lower level of risk. The Waterfront homes in Lee and Volusia counties yielded comparable returns at significantly lower levels of risk than the Water Access homes. The incongruous risk/return relationship in these two counties points to the existence of a potential "mispricing" of Waterfront and Water Access homes.

## Price Change Cross-Correlation

To test whether prices changes over time are consistent across the three distance groups, cross-correlation matrices were generated to examine the relative price movement of Waterfront, Water Access, and Inland homes. The correlation matrices were built from the period-by-period return coefficients estimated through the RSRs and help quantify the varying price change movements. The correlation results for 1977-2000 are presented in the table below. See Appendix VIII for correlation matrices for the period 1977-2002.

**Cross-Correlation Matrices of Price Changes**
***1977-2000***

***Dade County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 80.74% | 1 | |
| Inland | 51.62% | 58.99% | 1 |

***Lee County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 60.73% | 1 | |
| Inland | 80.16% | 57.35% | 1 |

***Escambia County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 14.47% | 1 | |
| Inland | 48.10% | 52.22% | 1 |

***Volusia County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 84.04% | 1 | |
| Inland | 93.93% | 85.41% | 1 |

The price changes are positively correlated across the three distance groups and across the four counties, as expected, but there is no clear uniformity of cross-correlation strength. As was visible in the volatility charts presented earlier, Volusia County exhibits the highest level of correlation while Escambia County exhibits the lowest level.

Price changes in Waterfront and Inland homes appear to be closely correlated (greater than 80% correlation) in Lee County (80.16%) and Volusia County (93.93%), while a significantly lower level of correlation exists between the two in Dade County (51.62%) and Escambia County (48.10%). These levels of correlation for Dade and Escambia counties indicate that price co-movement between the Waterfront and Inland indices occurs roughly 50% of the time. For every year in which Inland home prices increase, Waterfront home prices only increase 50% of time and vice-versa.

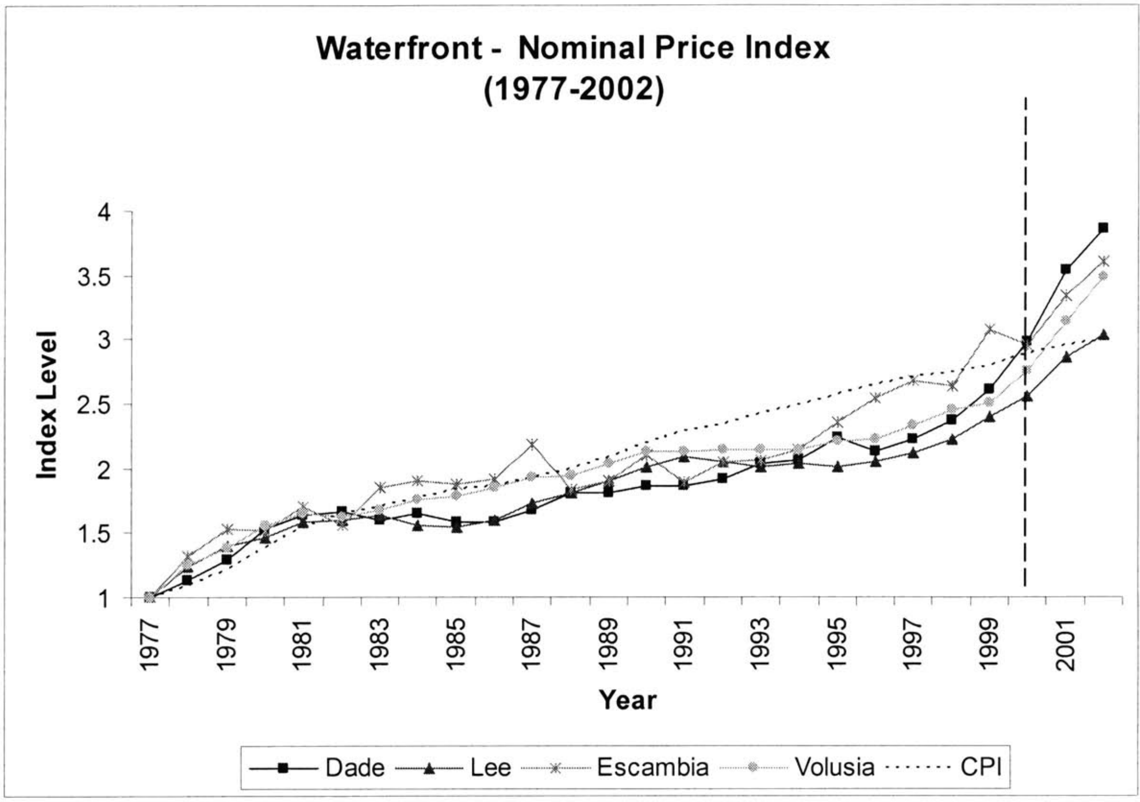
The price change cross-correlation between Waterfront and Water Access homes is great in Dade County (80.74%) and Volusia County (84.04%), lower in Lee County (60.73%), and extremely low in Escambia County (14.47%). The magnitude of the 14.47% correlation level is potentially a flawed product of econometric estimation process. Nonetheless, the correlation figure indicates a significant level of dispersion between the price changes of Waterfront and Water Access homes in Escambia County.

Of great interest are the correlation levels between the three distance groups. Although all three groups have experienced strong upward growth over the study period, but each group appears to have its own idiosyncratic periods of price growth and decline.

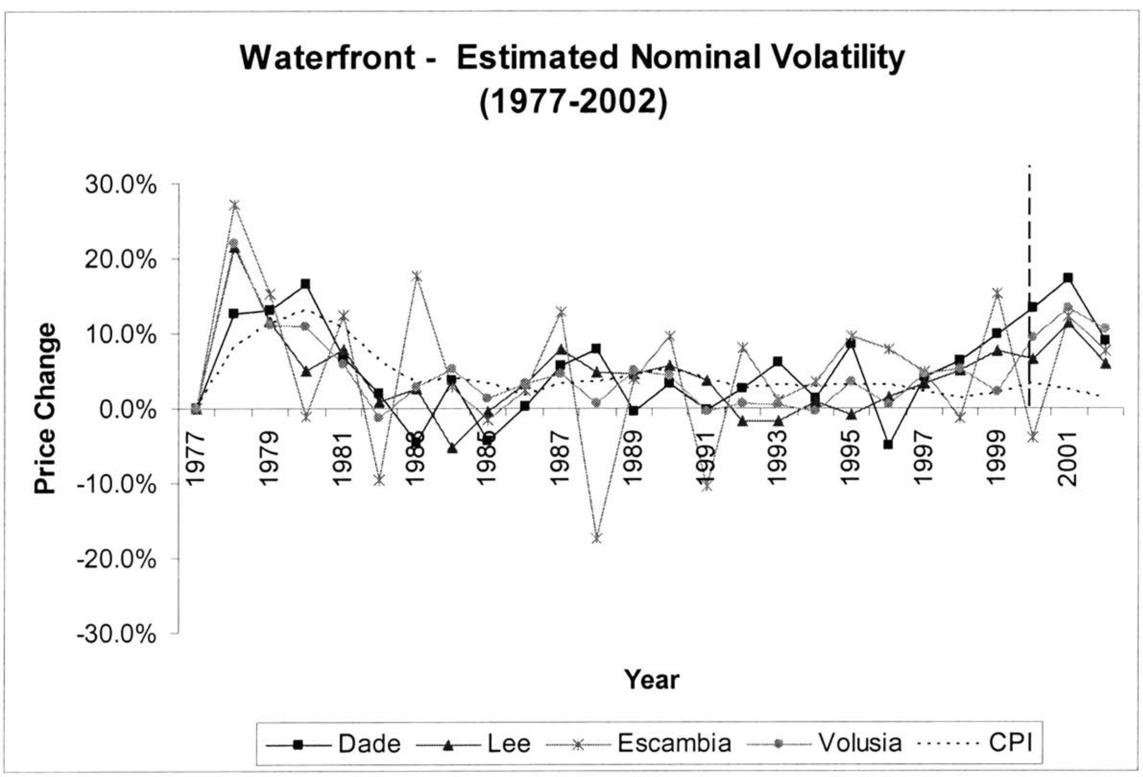
## County Performance Comparison

To compare return performance across the four counties studied, average annual returns and volatilities were calculated and compared across the Waterfront, Water Access, and Inland distance groups. The results were generated in order to determine, ex post, the best performing county over the study period. Price indices and volatility charts for the three distance groups are presented below for the period 1977-2002. A dashed line demarks year end 2000. The performance results are presented for the time period 1977-2000. For comparison, performance tables for the time period 1977-2002 and included in Appendix IX.

## Waterfront



Waterfront - Nominal Price Index
(1977-2002)
Index Level
4
3.5
3
2.5
2
1.5
1
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia
CPI

Waterfront - Estimated Nominal Volatility
(1977-2002)
Price Change
30.0%
20.0%
10.0%
0.0%
-10.0%
-20.0%
-30.0%
1977
1979
1981
1987
1989
1993
1995
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia
CPI

The general price trend for Waterfront homes, over the past twenty-five years, has been strong growth relative to that of Inland and Water Access homes. Although Waterfront homes have enjoyed relatively high nominal appreciation rates, the average inflation adjusted or real returns have been minimal.[29] The greatest upward movement occurred in the late-1970s and then again from the mid-1990s through 2002. A moderate price slump occurred in Dade and Lee Counties in the mid-1980s. The effect of the early 1990s recession is visible in the indices of all four counties, with the Dade County and Volusia County indices exhibiting the greatest downward movement.

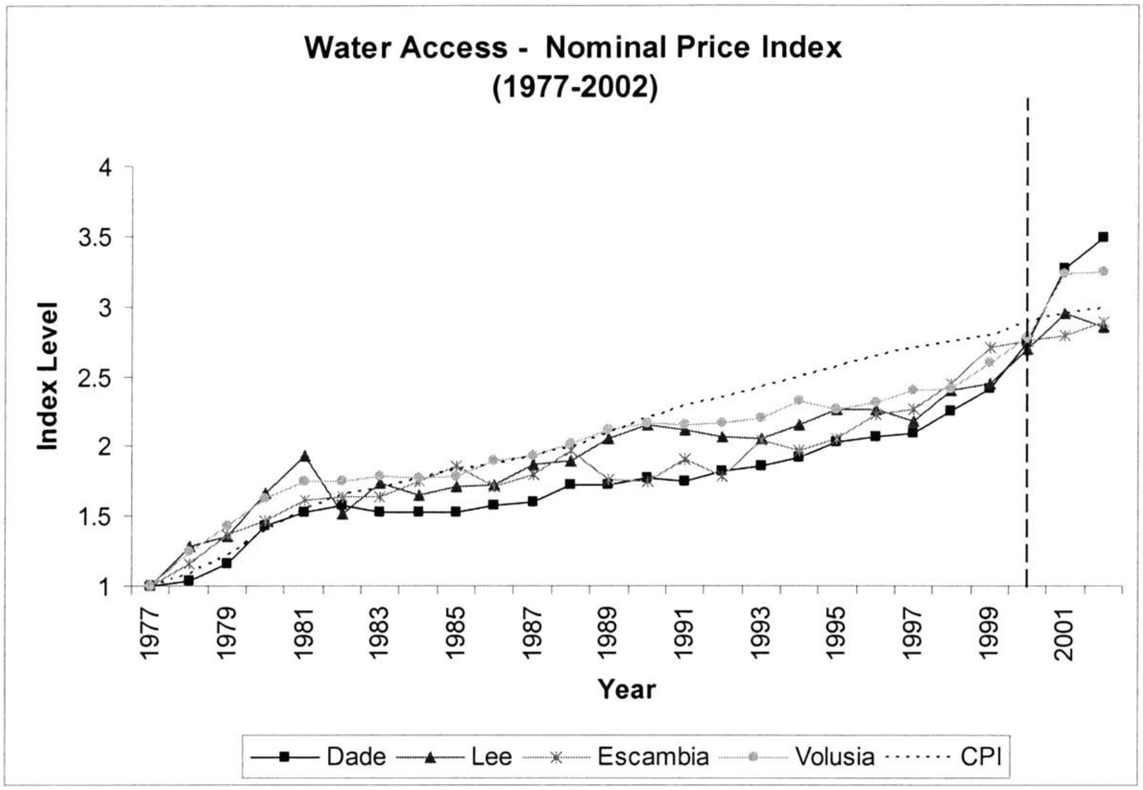
**Waterfront Performance Measures (1977-2000)**

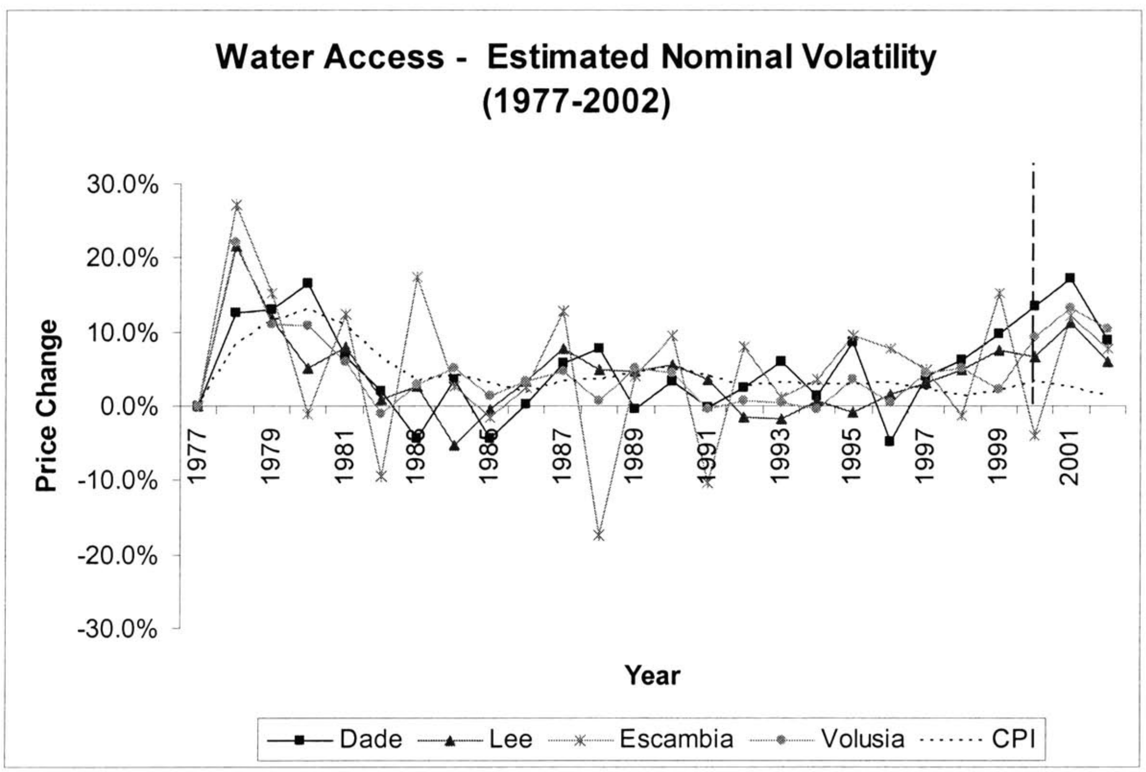
| | Dade | Lee | Escambia | Volusia |
|---|---|---|---|---|
| **MEAN** | 5.40% | 4.44% | 5.13% | 4.99% |
| **MEDIAN** | 5.70% | 4.64% | 4.79% | 4.37% |
| **Estimated STDEV** | 6.21% | 5.38% | 9.72% | 5.34% |
| **Unbiased STDEV** | 5.31% | 4.30% | 5.23% | 4.51% |

Although Dade County posts the greatest average annual returns for Waterfront homes, Dade County has not always been the top performer. Until 1993, Dade County was the worst performer; but since the trough of 1991, the Dade County Waterfront index has grown exponentially, surpassing the other indices in 2000. Dade County also has the highest unbiased volatility of the four counties. Escambia County has experienced the most recent price volatility, but much of the volatility pictured is a result of random noise due to small sample size. Comparing the estimated standard deviation calculation with the unbiased standard deviation the success of the random noise filter used in this study is evident. Lee County has continually been the most steady, least volatile, but worst performing county.

[29] See the Real Returns section of this study for an inflation adjusted returns analysis.

## Water Access



In contrast to the Waterfront index, the price growth experienced by the Water Access index has not been as strong or as steady. The Waterfront price indices reach a combined average index level of 2.8 in 2000 with a range from 2.6 for Lee County to 3.0 for Dade County. The Water Access indices converge on a combined average index level of 2.7 in 2000 with a narrow range from 2.7 for Lee County to 2.8 for Volusia County. The price index growth, especially for Waterfront homes, for 2001 and 2002 is remarkable. Including 2001 and 2002, the average Waterfront and Water Access indices reach 3.5 and 3.1 respectively, with a price change of 24.5% for Waterfront and 13.6% for Water Access.

The Water Access indices exhibit greater volatility in comparison with the Waterfront indices. The greatest upward movement occurred in the late-1970s and the again in the mid-1990s through 2002. A moderate price slump is seen in Dade, Lee, and Volusia Counties in the mid-1980s. The early-1990s recession is visible but with minimal impact on Dade County. The 1990s recession appears to have had a stronger effect on Volusia and Lee Counties. Escambia County shows price fluctuation throughout the early to mid-1990s.

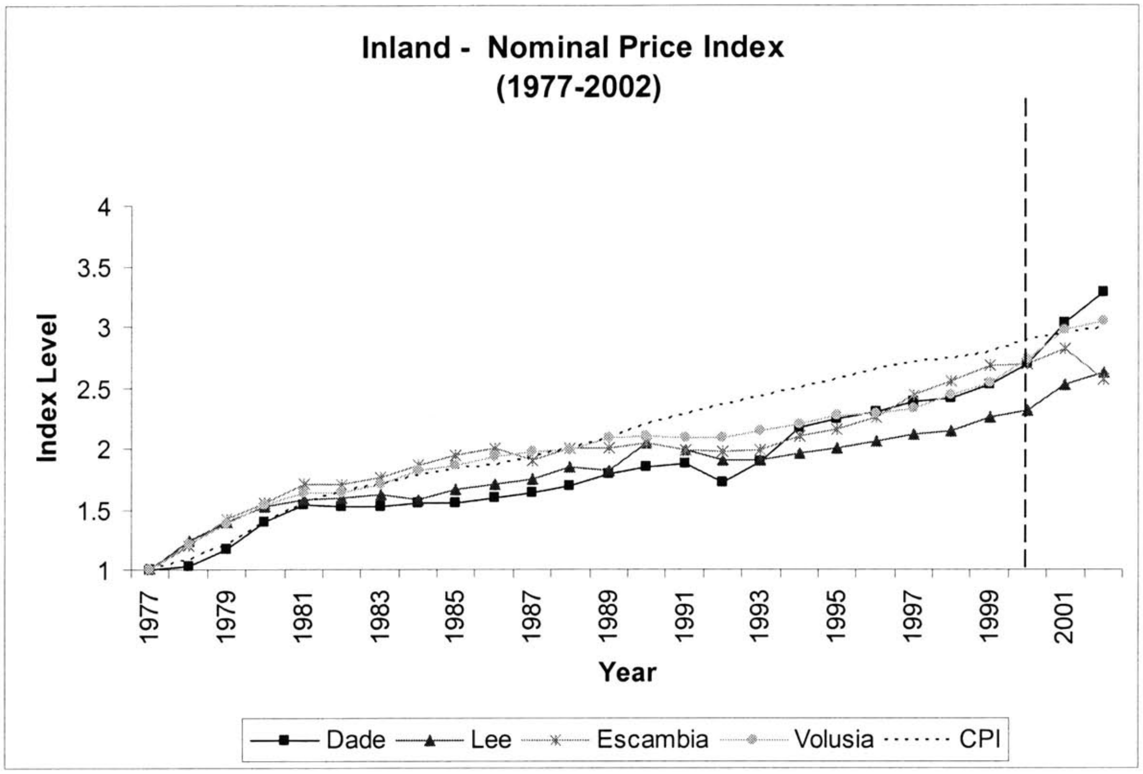
**Water Access Performance Measures (1977-2000)**

| Water Access | Dade | Lee | Escambia | Volusia |
|---|---|---|---|---|
| MEAN | 5.00% | 4.18% | 4.23% | 4.70% |
| MEDIAN | 3.10% | 4.79% | 4.96% | 2.41% |
| Estimated STDEV | 5.73% | 9.57% | 6.83% | 5.89% |
| Unbiased STDEV | 4.69% | 7.45% | 5.15% | 5.35% |

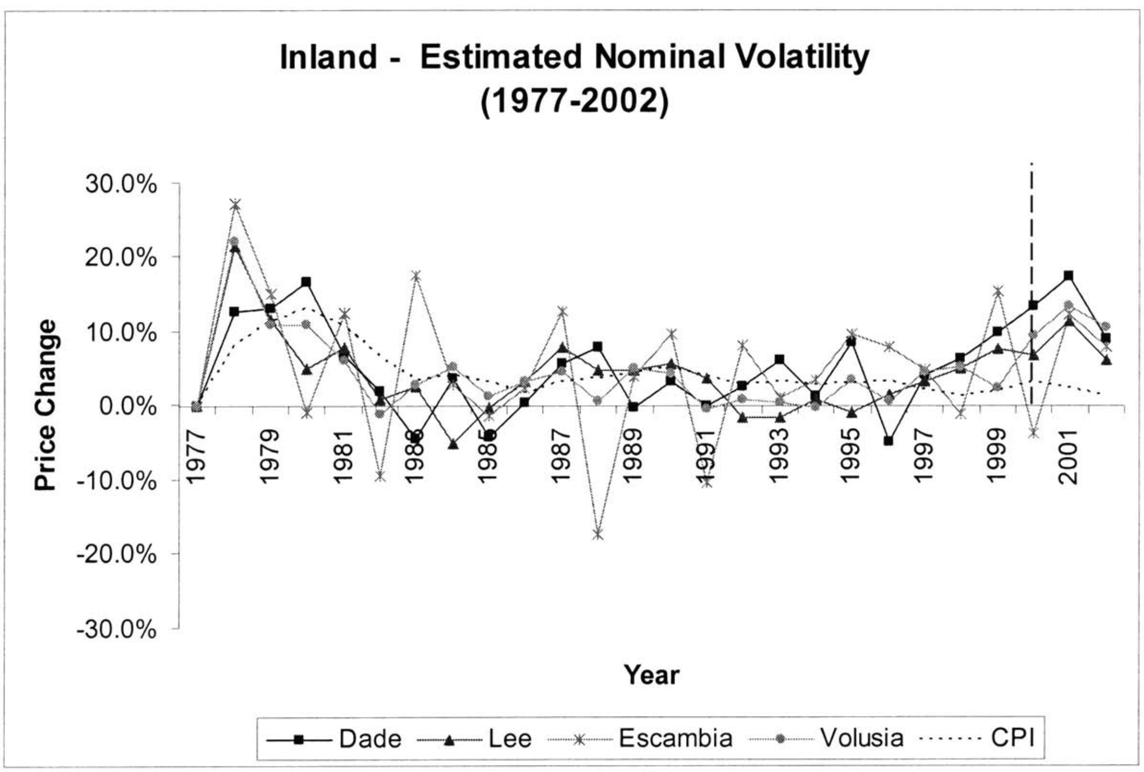
Water Access homes in Dade County posted the greatest average returns over the study period, which is again attributable to recent price movement. Over the period 1997-2000, Dade County grew 7.13% while the other three counties averaged 4.73% annual growth.[30] The Dade County Water Access index has the lowest unbiased volatility of the four counties. From the price index chart, Volusia County Water Access homes exhibit the strongest and steadiest long-run price growth.

[30] Average Water Access growth rates1997-2000: Lee County (4.29%), Escambia County (4.88%), and Volusia County (4.54%). Average Water Access growth rates 2001-2002: Dade County (12.05%), Lee County (2.77%), Escambia County (2.28%), and Volusia County (7.74%).

## Inland



Inland - Nominal Price Index
(1977-2002)
Index Level
4
3.5
3
2.5
2
1.5
1
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia
CPI

Inland - Estimated Nominal Volatility
(1977-2002)
Price Change
30.0%
20.0%
10.0%
0.0%
-10.0%
-20.0%
-30.0%
1977
1979
1981
1987
1989
1993
1995
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia
CPI

In contrast to the Waterfront and Water Access indices, the growth of the Inland indices has not been as strong, but it has been relatively less volatile. The Inland price indices attain a combined average index level of 2.6 in 2000 with a range from 2.3 for Lee County to 2.7 for Volusia County. This combined average index level of 2.6 is compared with 2.8 for Waterfront and 2.7 for Water Access. All three distance groups trade in a narrow band with Waterfront achieving the greatest appreciation level. To further document the price boom of Waterfront homes over the two year period started 2001, the combined average Inland home index reached 2.9 in 2002 relative to 3.5 for Waterfront and 3.1 for Water Access.[31]

The Inland indices exhibit less volatility in comparison with the Waterfront and Water Access indices. As found with the indices for the other distance groups, the greatest upward movement occurred in the late-1970s and in the mid-1990s through 2002. A moderate price slump is seen in all four counties in the mid-1980s. The impact of the early 1990s recession is most pronounced in the Inland indices, as compared with the Waterfront and Water Access indices. All four counties exhibit a steady decline from 1990 to 1992 with the greatest price drop and rebound seen in Dade County.

**Inland Performance Measures (1977-2000)**

| Inland | Dade | Lee | Escambia | Volusia |
|---|---|---|---|---|
| MEAN | 4.75% | 3.85% | 3.77% | 4.44% |
| MEDIAN | 3.28% | 2.70% | 4.03% | 3.07% |
| Estimated STDEV | 5.50% | 5.44% | 5.95% | 4.56% |
| Unbiased STDEV | 5.38% | 3.96% | 5.09% | 4.35% |

Dade County Inland homes have the greatest average annual return and the highest unbiased volatility of the four counties. This highest average annual return is attributable to the intense price run experienced since the trough of early-1990s recession. From 1993 to 2000, Dade County homes have averaged 5.60% annual appreciation. Over the same time period Lee, Escambia, and

[31] Price index percent change 2000 to 2002: Waterfront 24.5%, Water Access 13.6%, and Inland 10.1%

Volusia Counties grew at annual rates of 2.44%, 3.87%, and 3.40% respectively.[32] The Volusia County Inland homes, like the Water Access homes, experienced the most steady long-run price performance.

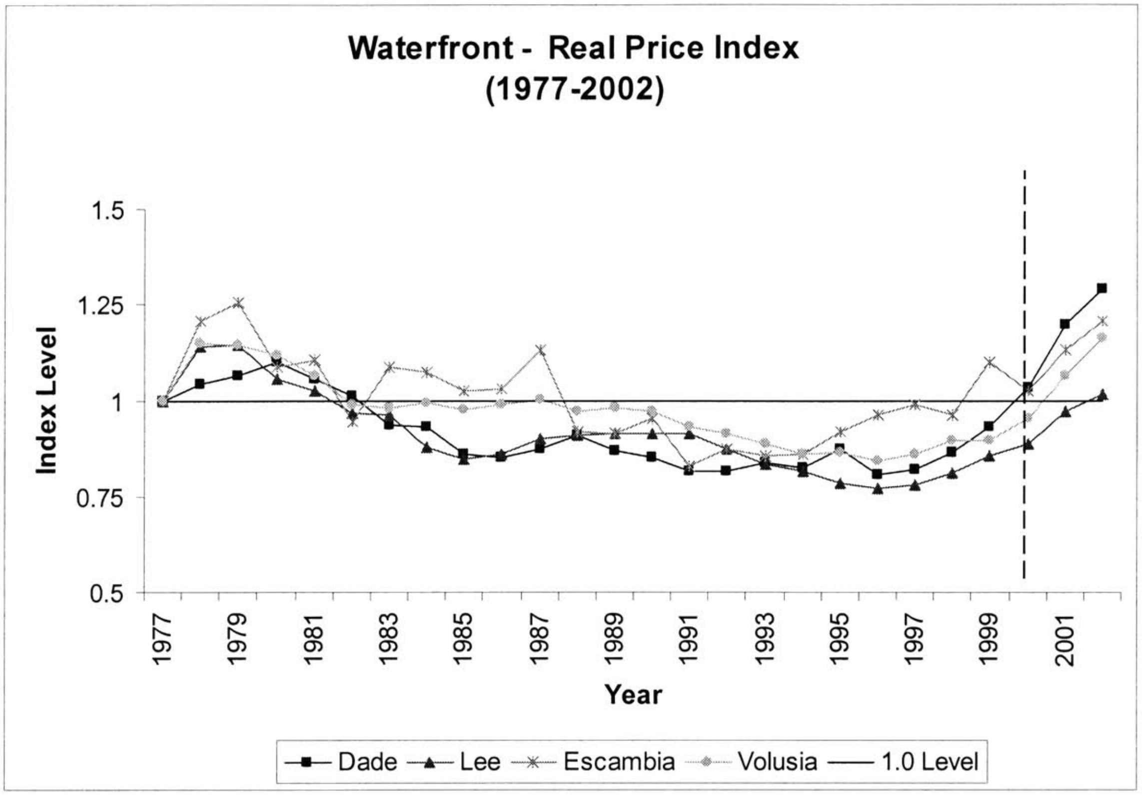
## Real Returns

Real Estate is often praised for its inflation-hedging qualities. The price appreciation stated thus far has been reported in nominal arithmetic mean returns. In this section, the returns are put to the test against the CPI in order to determine real performance of single-family homes in the four counties studied.[33] An inflation adjusted or real price index and volatility chart is presented for each distance group: Waterfront, Water Access, and Inland. The dashed vertical line demarks year end 2000. Also included in this section is a comparison of the average annual nominal and real returns. See Appendix X for tables displaying the yearly nominal and real price changes.

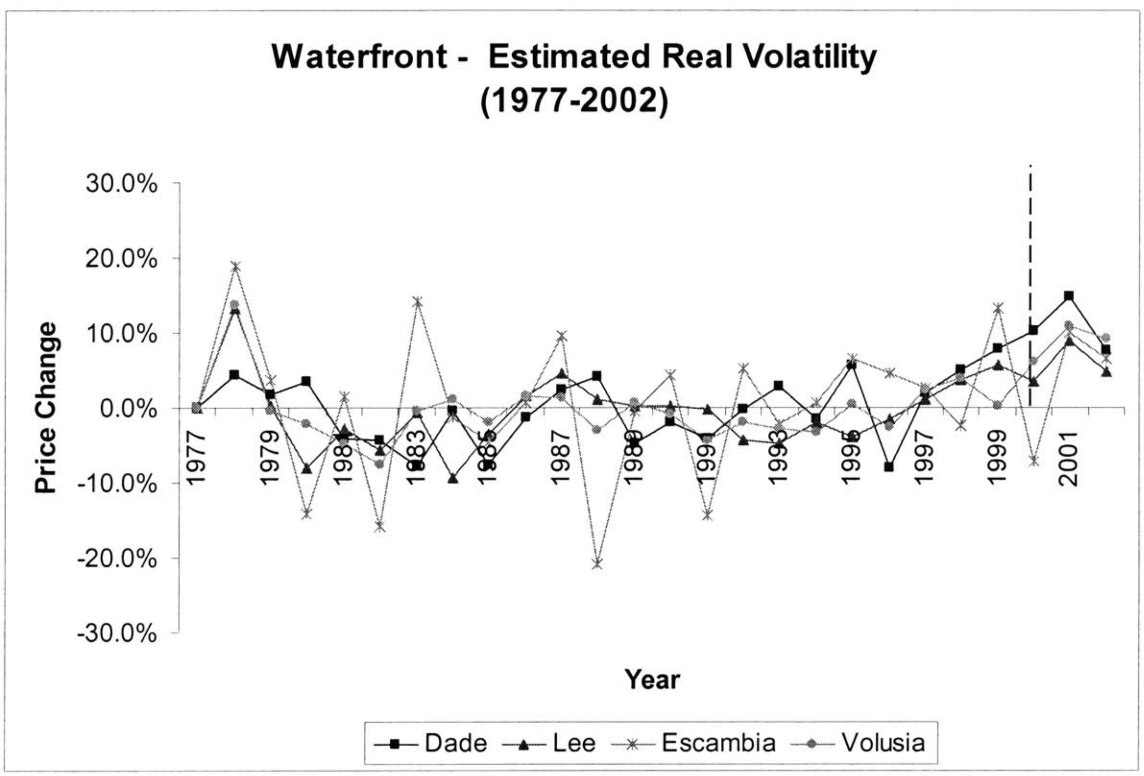
[32] Average Inland growth rates 2001-2002: Dade County (7.90%), Lee County (5.86%), Escambia County (1.31%), and Volusia County (5.16%).

[33] The Southeastern U.S. Consumer Price Index ("CPI") was used as the measure of inflation.

## Waterfront



Waterfront - Real Price Index
(1977-2002)
Index Level
1.5
1.25
1
0.75
0.5
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia
1.0 Level

Waterfront - Estimated Real Volatility
(1977-2002)
Price Change
30.0%
20.0%
10.0%
0.0%
-10.0%
-20.0%
-30.0%
1977
1979
1987
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia

The Waterfront home price indices in all four counties increased rapidly through the inflationary period of the late-1970s, growing at a combined average annual real rate of 6.93%.[34] During the mid-1980s economic slowdown, both Dade and Lee Counties suffered price slumps, Volusia County mirrored the CPI, and Escambia County outperformed it. Throughout the rest of the 1980s and until the most recent economic boom of the late-1990s, the Waterfront home price indices mounted real losses; the combined annual average loss over the period 1984-1996 was 1.24%.[35] The most severe losses occurred in 1990-1992, when the indices lost a combined annual average 1.34%. Over the three year period, Volusia County home prices realized annual real losses of 2.41%, followed by Dade County (2.07%), Escambia County (1.59%), and Lee County (1.45%). The 1997-2000 home price growth, spurred by low borrowing rates and high economic growth and personal consumption rates, increased at a combined average annual real rate of 3.58%. Dade County Waterfront grew at annual real rate of 6.18% over the period, nearly double that of the second fastest growing county—Lee County (3.44%).[36] Remarkable is the combined average 9.06% real growth rate yielded in 2001 and 2002. Dade County prices again increased rapidly with an annual 11.24% real growth rate, followed by Volusia County (9.98%), Escambia County (8.17%), and Lee County (6.84%). An average inflation rate of 1.81% over the same period, historically low borrowing rates, and a shift of capital away from stocks and into real estate helped make these large real growth rates possible.

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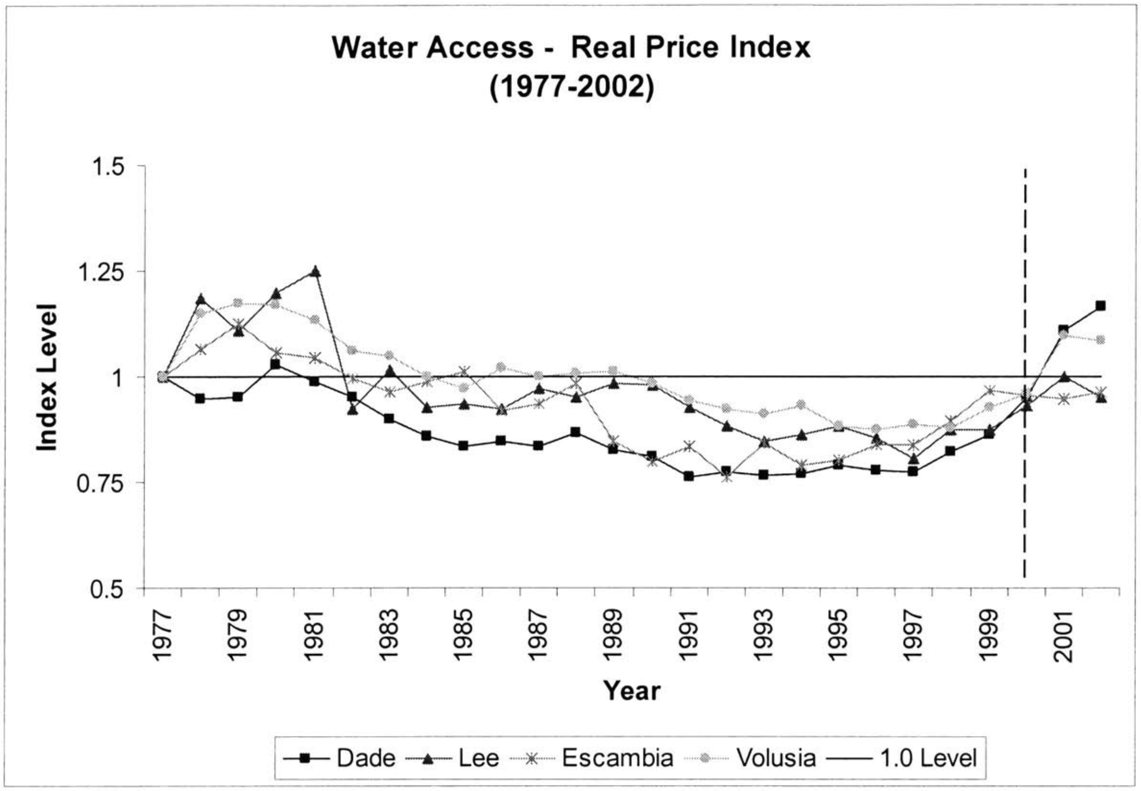
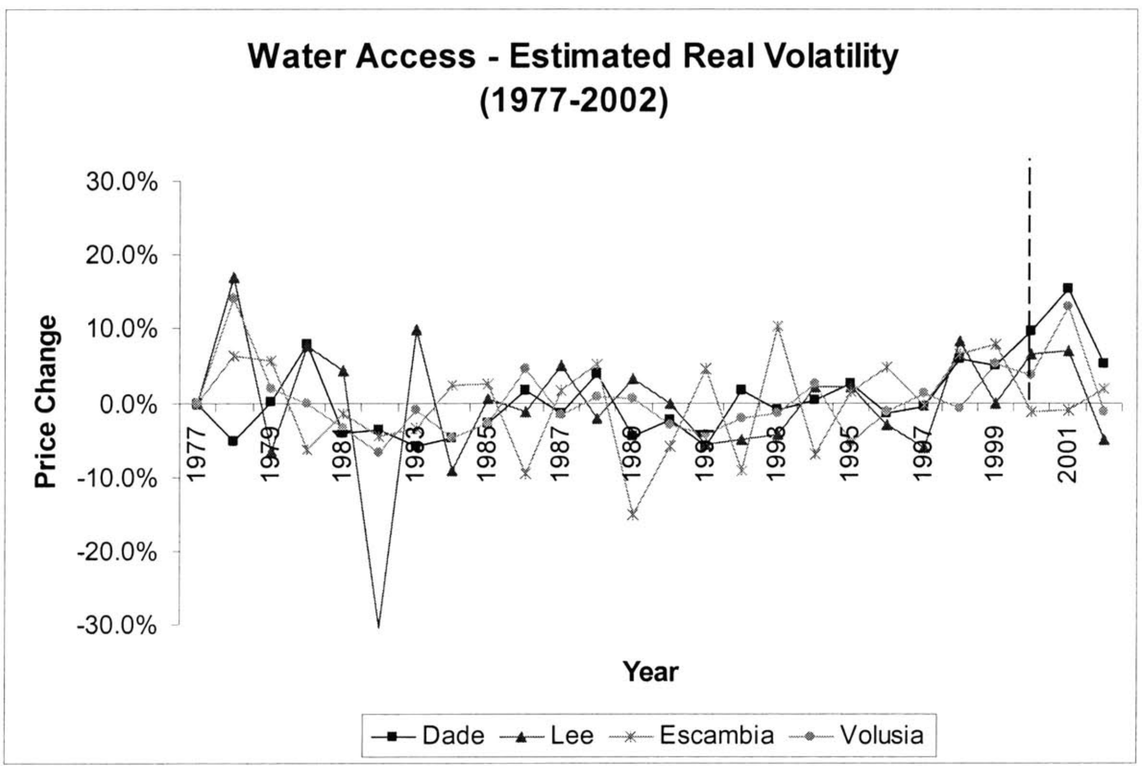
[34] Average Waterfront real growth rates 1978-1979: Dade County (3.03%), Lee County (6.71%), Escambia County (11.33%), and Volusia County (6.66%).
[35] Average Waterfront real growth rates 1984-1996: Dade County (-1.14%), Lee County (-1.69%), Escambia County (-0.94%), and Volusia County (-1.19%).
[36] Average Waterfront real growth rates 1997-2000: Dade County (6.18%), Lee County (3.44%), Escambia County (1.56%), and Volusia County (3.14%).

## Water Access



The Water Access indices, like the Waterfront indices, increased rapidly in the late-1970s, with all but Dade County prices growing faster than inflation. The combined average annual real growth rate for the Water Access indices over the period 1978-1979 was 4.13%.[37] During the mid-1980s economic slowdown, both Dade and Lee Counties suffered price slumps, Volusia County mirrored the CPI, and Escambia County vacillated down to the floor created by Dade County. Over the next six years, Volusia County continued to pace the CPI, while the other indices lost ground, until the recession of the early-1990s. During the recessionary 1990-1992 period, the Water Access indices posted a combined annual average real loss of 3.11%. This annual loss was 177 basis points more severe than that suffered by the Waterfront indices (1.34%). Lee County suffered annual losses of 3.59% over the three year period; Escambia County, Volusia County, and Dade County losses averaged 3.52%, 3.11%, 2.20% respectively. From the trough of the early-1990s recession until 1997, the Water Access indices paced the CPI. The late-1990s economic boom sent Water Access home prices upward. Over the four year period (1997-2000) the four Water Access indices yielded an average annual real return of 3.18%, a yield 40 basis points shy of that achieved by the Waterfront indices. Dade County averaged real growth of 4.99%; Escambia, Volusia, and Lee Counties yielded 3.20%, 2.39%, and 2.14% respectively. Like the Waterfront indices, the Water Access indices achieved above average real returns in 2001. In contrast to the combined average 9.06% real return seen in the Waterfront prices over the two years (2001-2002), the Water Access prices averaged a 4.40% return.[38] Evident is a tapering off of Water Access home price growth in 2002. Both Lee and Volusia Counties showed real losses while Dade County and Escambia County home prices continued to grow but at significantly lower rates.[39]

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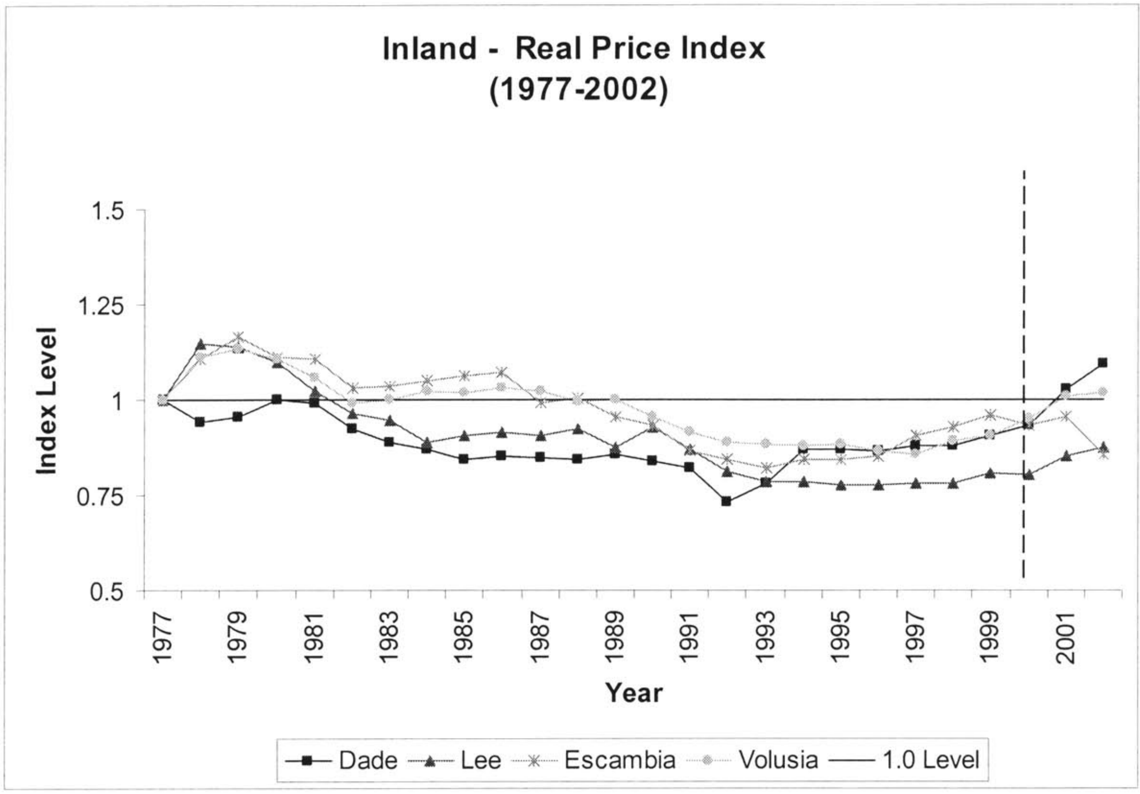
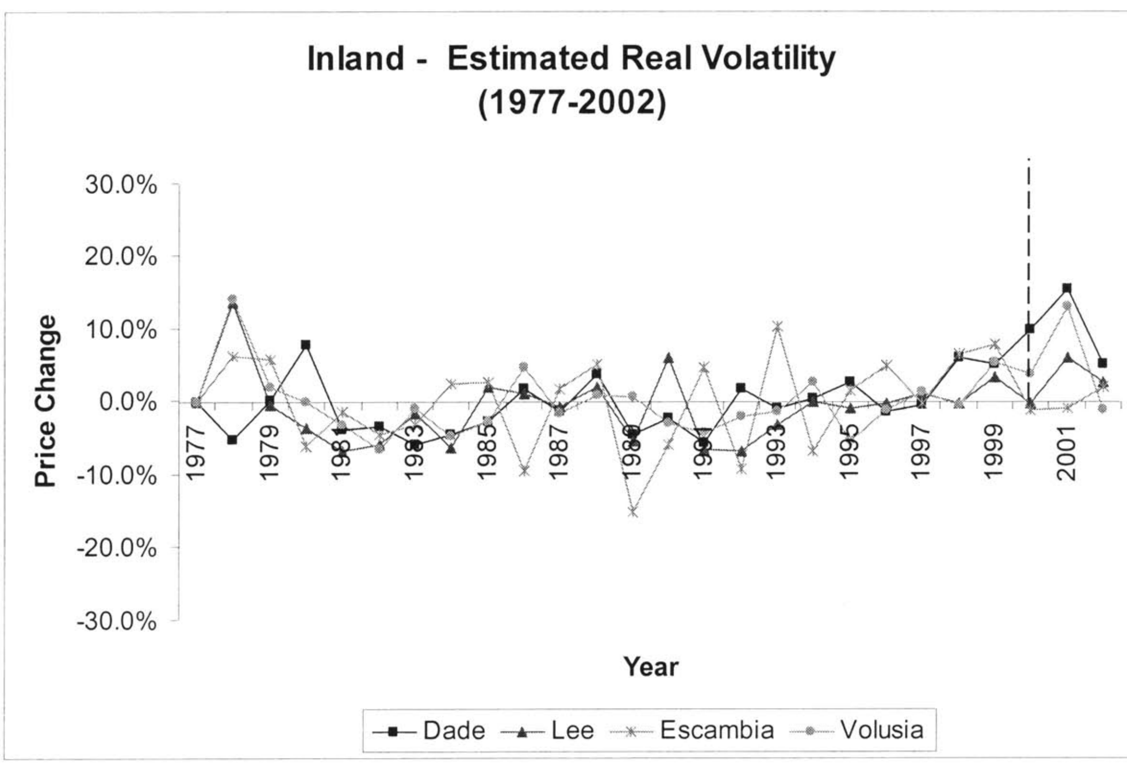
[37] Average Water Access real growth rates 1978-1979: Dade County (-2.50%), Lee County (5.17%), Escambia County (5.96%), and Volusia County (7.91%).
[38] Average Water Access real growth rates 2001-2002: Dade County (10.24%), Lee County (0.96%), Escambia County (0.47%), and Volusia County (5.93%).
[39] Average Water Access real growth rates 2002: Dade County (5.14%), Lee County (-4.97%), Escambia County (1.85%), and Volusia County (-1.14%).

## Inland



Inland - Real Price Index
(1977-2002)
1.5
1.25
1
0.75
0.5
Index Level
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia
1.0 Level

Inland - Estimated Real Volatility
(1977-2002)
30.0%
20.0%
10.0%
0.0%
-10.0%
-20.0%
-30.0%
Price Change
1977
1979
1985
1987
1993
1995
1997
1999
2001
Year
Dade
Lee
Escambia
Volusia

The Inland home price indices, like the Waterfront and Water Access indices, increased rapidly in the late-1970s, with all but Dade County prices outpacing the CPI. The combined average annual real growth rate for the Inland indices over the period 1978-1979 was 4.57%; compare this with 6.93% real growth for Waterfront homes and 4.13% real growth for Water Access homes.[40] During the mid-1980s economic slowdown, Dade and Lee Counties experienced price dips, Volusia County mirrored the CPI, and Escambia County remained above the CPI until 1987. Volusia County prices remained at parity with the CPI until the recession of the early-1990s. The Inland price indices realized a combined annual real loss of 3.98% over the period 1990-1992; the Inland loss rate over the three year period exceeded that of Waterfront (1.34%) and Water Access (3.11%) by 264 and 87 basis points respectively.[41] Inland homes experienced minimal real price growth throughout the mid-1990s, much like the Waterfront and Water Access homes. The late-1990s economic prosperity increased Inland home prices but at rates significantly lower than those experienced by the Waterfront and Water Access homes. Over the four year period (1997-2000) the Inland indices yielded a combined average annual real return of 1.85%; over the same period, the Waterfront and Water Access indices increased at average rates of 3.58% and 3.18% respectively.[42] 2001 and 2002 were strong years for the Inland indices; the indices posted a combined average real growth rate of 2.86%. However, the Inland indices did not experience as much price growth in 2001 and 2002 as compared with the growth exhibited by the Waterfront (9.06%) and the Water Access (4.40%) indices.[43]

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[40] Average Inland real growth rates 1978-1979: Dade County (-2.22%), Lee County (6.55%), Escambia County (7.72%), and Volusia County (6.23%).

[41] Average Inland real growth rates 1990-1992: Dade County (-5.16%), Lee County (-2.48%), Escambia County (-4.28%), and Volusia County (-3.99%).

[42] Average Inland real growth rates 1997-2000: Dade County (1.88%), Lee County (0.92%), Escambia County (2.24%), and Volusia County (2.37%).

[43] Average Inland real growth rates 2001-2002: Dade County (7.94%), Lee County (4.36%), Escambia County (-4.23%), and Volusia County (3.35%).

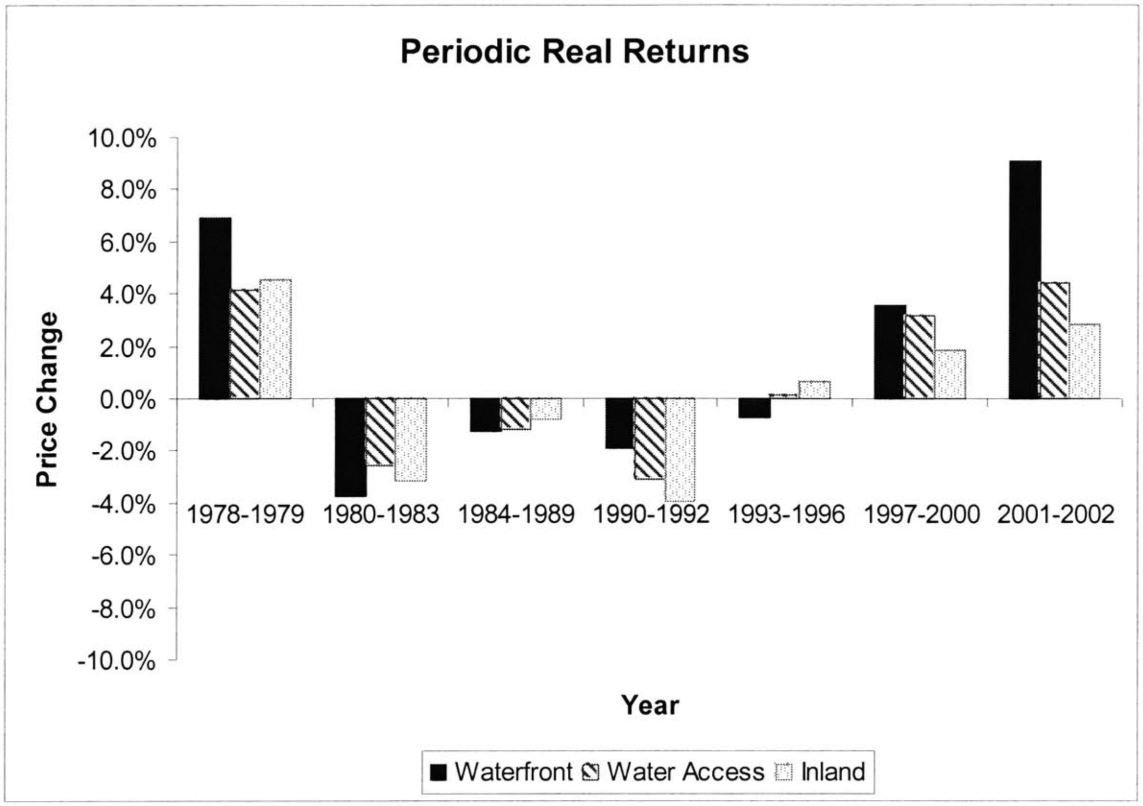
## Summary

**Real Arithmetic Mean Returns (1977-2000)**
***Average CPI (1977-2000)*** ***4.60%***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| **Dade** | 0.13% | -0.22% | -0.29% |
| **Lee** | -0.53% | -0.30% | -0.95% |
| **Escambia** | 0.10% | -0.20% | -0.30% |
| **Volusia** | -0.21% | -0.17% | -0.22% |

The real arithmetic mean returns, presented in the table above, show a tight real return range between the three groups with the Waterfront index yielding, on average, the highest returns. An investment in the Waterfront home index from 1977-2000, in Dade County or Escambia County, would have yielded a positive real return over the life of the investment. The average annual real returns on Waterfront homes, correcting for a 4.60% average CPI, range from -0.53% in Lee County to 0.13% in Dade County. A few conclusions can be drawn from these results. First, single-family home appreciation in the four counties studied closely tracked inflation, on average. Second, Waterfront and Water Access homes outperformed Inland homes over the study period; this is evidenced by Waterfront and Water Access homes higher or equal returns than the Inland indices in all four counties. Third, Waterfront homes, on average, outperformed the Water Access homes; this is exhibited by Waterfronts higher or equal returns than Water Access in all but Lee County. Therefore, it can be concluded that Waterfront homes, on average, over the 1977-2000 period, yielded the highest real returns. Although Waterfront homes yielded the highest returns, it is interesting from an investment perspective that homes in only two of the four counties experienced real price growth over the study period. See Appendix XI to compare 1977-2000 real arithmetic mean returns presented above with 1977-2002 real returns.

The twenty-five year study period was divided into time sections to analyze the distance groups relative performances over time and economic conditions. The returns presented in the table and chart below are combined average real returns for the four counties studied; average CPI over the period is included in the table as a reference.[44]




**Real Arithmetic Mean Returns by Time Period**
***Combined Average of 4 Counties***

| | *1978-1979* | *1980-1983* | *1984-1989* | *1990-1992* | *1993-1996* | *1997-2000* | *2001-2002* |
|---|---|---|---|---|---|---|---|
| **CPI** | 9.86% | 8.39% | 3.35% | 3.96% | 2.99% | 2.15% | 1.81% |
| **Waterfront** | 6.93% | -3.73% | -1.26% | -1.88% | -0.73% | 3.58% | 9.06% |
| **Water Access** | 4.13% | -2.55% | -1.17% | -3.11% | 0.12% | 3.18% | 4.40% |
| **Inland** | 4.57% | -3.15% | -0.80% | -3.98% | 0.66% | 1.85% | 2.86% |

The combined Waterfront index outperformed the other indices in four of the seven time periods. Waterfront homes experienced the most significant gains in the inflationary late-1970s, the prosperous late-1990s, and in the remarkable housing market of 2001 and 2002. Waterfront homes were also

[44] The combined average was calculated by taking the simple average or mean of all returns across all four counties for the specified time period.

relatively insulated from the early-1990s recession, losing an average 1.88% over the period.

The combined Waterfront index performed the worst, in comparison with the Water Access and Inland indices, throughout the 1980s and again in 1993-1996. The 1993-1996 price slump may be attributable to a delayed impact of the 1990-1992 recession; the Waterfront price base may have been eroded by the Inland and Water Access home price bargains.

The three distance groups have all experienced significant real growth since 1997 due in part to low inflation, remarkable economic growth (1997-2000), historically low borrowing rates (2001-2002), and flow of capital from the equity markets into real estate (2001-2002). Water Access and Inland homes should have experienced equally rapid growth to Waterfront homes, but this was not the case. Over the period, Waterfront homes outperformed the Water Access and Inland homes, yielding a real return of 3.58% from 1997-2000 and 9.06% from 2001-2002. Over the same time periods, the Water Access index yielded 3.18% and 4.40% while the Inland index yielded 1.85% and 2.86%. The average price appreciation differences are likely explained by a factor inherent to Waterfront property; perhaps the view, the exclusivity, the privacy, or some other intangible amenity has allowed the Waterfront index to perform as it has. One potential market based explanation is that of scarcity of supply. There is only so much coastal waterfront property, and all things being equal, supply constraints tend to drive up prices.

# CONCLUSION

This study applied the classic capital markets risk/return relationship—the riskier the investment, the greater the expected return—to the single-family home market. Treating coastal waterfront property as a unique asset class, its risk and return performance was measured over time and compared with that of inland property to determine the potential existence of a "mispricing" in the home market. A repeat-sales index (1977-2002) was constructed for four Florida waterfront counties: Dade County (Miami), Lee County (Ft. Myers), Escambia County (Pensacola), and Volusia County (Daytona). The homes in each county were divided into groups in order to analyze relative price performance with respect to distance from the water: Waterfront (0-250 meters), Water Access (251-500 meters), and Inland (2501-maximum meters).

The results of the applied classic capital markets risk/return relationship test were mixed. Waterfront homes averaged higher rates of price appreciation than Inland homes in three of the four counties and equal appreciation in the fourth county. In both Lee County and Escambia County, the higher level of return for Waterfront homes was commensurate with the additional risk. The Waterfront-Inland risk/return relationship for these two counties was consistent with the classic capital markets relationship. In contrast, the Waterfront-Inland risk/return relationships for Dade and Volusia Counties were inconsistent with the classic model. The Dade County Waterfront homes showed greater price appreciation with less risk than Inland homes. The Volusia County Waterfront homes yielded an equal return to the Inland homes with significantly less risk.

Waterfront homes yielded higher average returns than Water Access homes in two of the four counties. The Waterfront-Water Access risk/return relationship for Dade and Escambia Counties was consistent with the classic capital markets relationship. Conversely, the performance results for both Lee and Volusia counties did not adhere to the classic relationship. The Waterfront homes in Lee and Volusia counties yielded comparable returns at significantly lower levels of risk than the Water Access homes. These findings document a potential "mispricing" of waterfront homes in several of the counties studied. Waterfront homes in these counties experienced higher or equal price appreciation and lower levels of risk; following the classic capital markets rule, the prices of waterfront homes in these counties should be bid-up by buyers to the point at which these return inequities are cleared from the market. Before concluding that waterfront single-family homes represent arbitrage investment opportunities, additional research, encompassing a larger geographical area, including other states or U.S. regions, is necessary and would be beneficial in supporting the findings of this study.

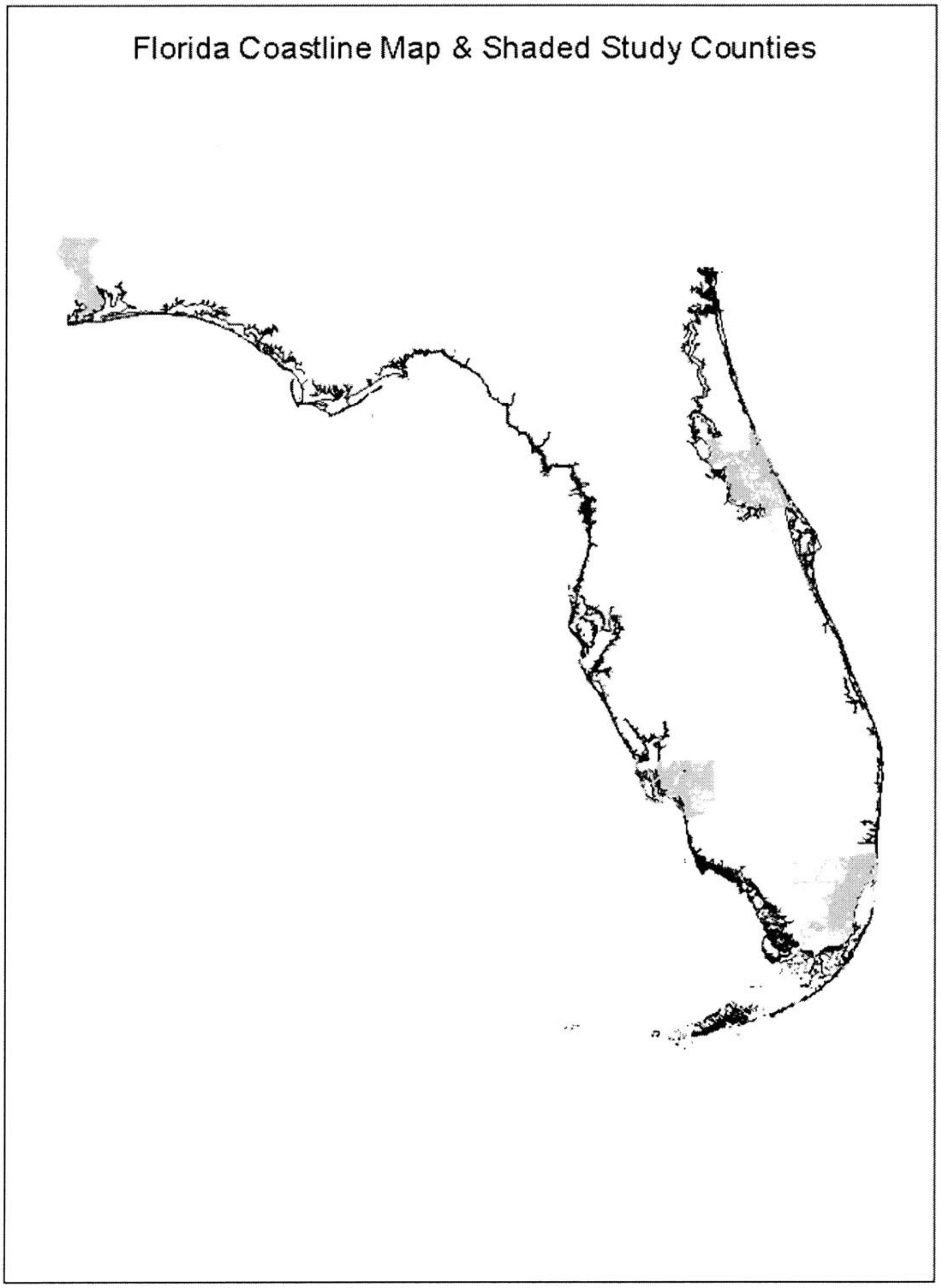
Waterfront homes yielded the highest level of return, but the appreciation differential over the period 1977-2000 was relatively small. Waterfront home prices, over the period, grew at an average rate 31.75 basis points higher than Inland home prices. Throughout the late-1990s and early-2000s, Waterfront home returns continued to diverge from Inland returns. From 1997-2000, Waterfront home prices increased at an inflation adjusted rate of 3.58% relative to 1.85% for Inland homes; and from 2001-2002 Waterfront homes averaged a remarkable annual real appreciation rate of 9.06% in comparison with 2.86% for Inland homes. The price appreciation differential between Waterfront and Inland homes is potentially explained by an attribute—view, boating and recreation access, privacy, or exclusivity—inherent to Waterfront property. Further research testing the importance of various coastal waterfront home attributes and their effect on price appreciation would be useful.

Scarcity of supply is a likely economic explanation of the relatively higher price growth rate of waterfront homes. Coastal home lots are limited and continue to grow scarcer as a result of environmental protection. Frech and Lafferty (1984) found that environmental coastal protection increased the prices of coastal homes, more than other homes, by not only reducing waterfront land supply but also creating a permanent positive amenity enjoyed disproportionately by the waterfront homes.[45] Another valuable extension of this study would be the application of its methodology to homes in proximity to lakes, rivers, and other natural amenities.

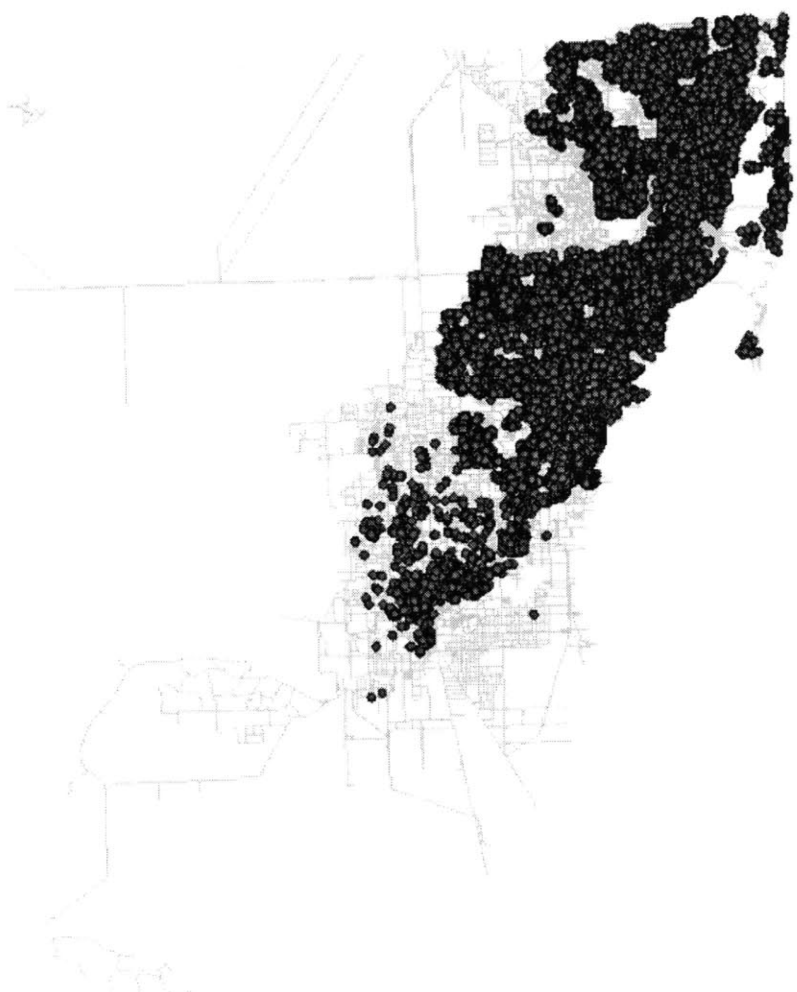
If the average home performance over the past twenty-five years is held as a good indicator of the expected performance over the next twenty-five years, then the findings of this study lead to a conclusion that the purchase of a waterfront home is, on average, a better investment than the purchase of a more inland home, ceteris paribus. The recent home price boom, especially in waterfront home prices, should be viewed an anomaly in light of the average home price performance from 1977-2000. Short-term home appreciation rates are not necessarily indicative of long-run performance; therefore, it is unlikely that the significant appreciation premium that waterfront homes exhibited in 2001 and 2002 is sustainable. Additionally, the investment performance depends upon location, holding period, home quality, and a myriad of other factors, but the findings of this study suggest that the average waterfront home owner should reap greater price appreciation with potentially less risk. With consistent population growth in coastal regions and continued environmental protection, over the long-run, average waterfront home performance will likely continue to exceed and diverge from the average performance of inland homes.

[45] Frech, H., and Lafferty, R, (1984). "The Effect of the California Coastal Commission on Housing Prices," *Journal of Urban Economics*, Vol. 16. p.118. House prices increased the most for houses close to the coast due to both the amenity effect and the scarcity effect. Inland home prices rose a lesser amount and largely due to the scarcity effect.

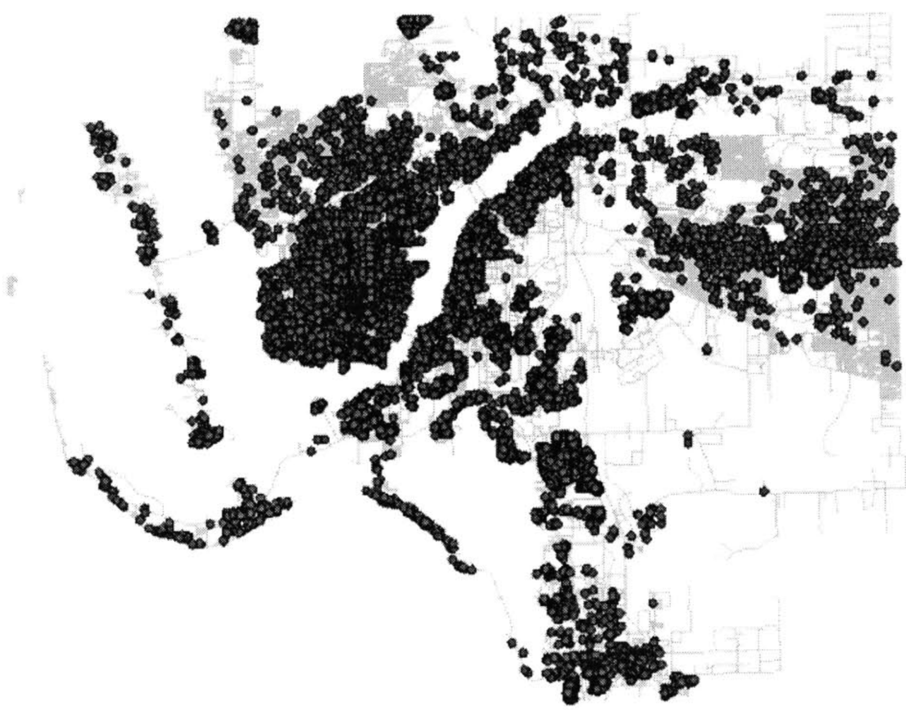
# APPENDIX I
***COUNTY ADDRESS MAPS***



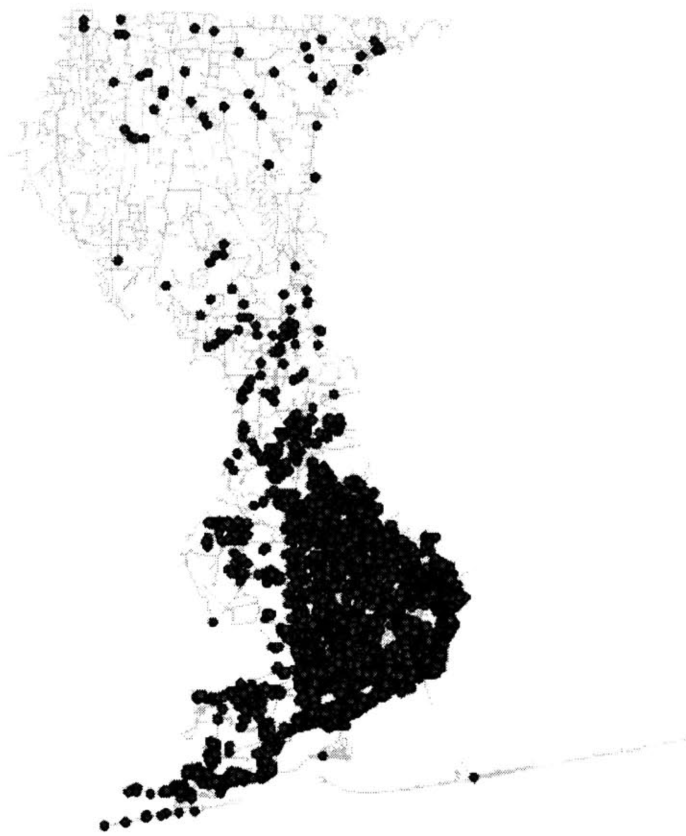
Dade County Street Map & Home Locations



Lee County Street Map & Home Locations



Escambia County Street Map & Home Locations



## Volusia County Street Map & Home Locations

# APPENDIX II

## *SALES FREQUENCY TABLES*

## Dade County (Miami)

**MOST RECENT SALE YEAR ($P_1$)**
***All Dade County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 0 | 0.0% |
| 1971 | 0 | 0.0% |
| 1972 | 0 | 0.0% |
| 1973 | 0 | 0.0% |
| 1974 | 0 | 0.0% |
| 1975 | 0 | 0.0% |
| 1976 | 0 | 0.0% |
| 1977 | 10 | 0.0% |
| 1978 | 46 | 0.1% |
| 1979 | 86 | 0.2% |
| 1980 | 197 | 0.5% |
| 1981 | 208 | 0.5% |
| 1982 | 193 | 0.5% |
| 1983 | 350 | 0.9% |
| 1984 | 432 | 1.1% |
| 1985 | 542 | 1.3% |
| 1986 | 733 | 1.8% |
| 1987 | 999 | 2.4% |
| 1988 | 1,060 | 2.6% |
| 1989 | 986 | 2.4% |
| 1990 | 1,075 | 2.6% |
| 1991 | 1,123 | 2.7% |
| 1992 | 1,436 | 3.5% |
| 1993 | 2,167 | 5.3% |
| 1994 | 2,199 | 5.4% |
| 1995 | 2,283 | 5.6% |
| 1996 | 2,645 | 6.4% |
| 1997 | 2,890 | 7.0% |
| 1998 | 3,741 | 9.1% |
| 1999 | 4,331 | 10.6% |
| 2000 | 4,804 | 11.7% |
| 2001 | 4,805 | 11.7% |
| 2002 | 1,677 | 4.1% |
| **TOTAL** | **41,018** | **100.0%** |

**PREVIOUS SALE YEAR ($P_2$)**
***All Dade County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 0 | 0.0% |
| 1971 | 0 | 0.0% |
| 1972 | 0 | 0.0% |
| 1973 | 0 | 0.0% |
| 1974 | 0 | 0.0% |
| 1975 | 0 | 0.0% |
| 1976 | 5 | 0.0% |
| 1977 | 406 | 1.0% |
| 1978 | 884 | 2.2% |
| 1979 | 1,134 | 2.8% |
| 1980 | 1,595 | 3.9% |
| 1981 | 1,299 | 3.2% |
| 1982 | 1,023 | 2.5% |
| 1983 | 1,360 | 3.3% |
| 1984 | 1,425 | 3.5% |
| 1985 | 1,461 | 3.6% |
| 1986 | 1,780 | 4.3% |
| 1987 | 2,012 | 4.9% |
| 1988 | 1,974 | 4.8% |
| 1989 | 2,214 | 5.4% |
| 1990 | 2,151 | 5.2% |
| 1991 | 2,009 | 4.9% |
| 1992 | 2,137 | 5.2% |
| 1993 | 2,848 | 6.9% |
| 1994 | 2,360 | 5.8% |
| 1995 | 2,123 | 5.2% |
| 1996 | 2,108 | 5.1% |
| 1997 | 1,897 | 4.6% |
| 1998 | 1,751 | 4.3% |
| 1999 | 1,525 | 3.7% |
| 2000 | 1,166 | 2.8% |
| 2001 | 287 | 0.7% |
| 2002 | 84 | 0.2% |
| **TOTAL** | **41,018** | **100.0%** |

## Lee County (Ft. Myers)

**MOST RECENT SALE YEAR ($P_1$)**
***All Lee County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 0 | .00% |
| 1971 | 0 | .00% |
| 1972 | 0 | .00% |
| 1973 | 0 | .00% |
| 1974 | 0 | .00% |
| 1975 | 0 | .00% |
| 1976 | 0 | .00% |
| 1977 | 12 | .07% |
| 1978 | 25 | .15% |
| 1979 | 49 | .29% |
| 1980 | 49 | .29% |
| 1981 | 38 | .22% |
| 1982 | 41 | .24% |
| 1983 | 47 | .27% |
| 1984 | 81 | .47% |
| 1985 | 96 | .56% |
| 1986 | 181 | 1.05% |
| 1987 | 227 | 1.32% |
| 1988 | 328 | 1.91% |
| 1989 | 371 | 2.16% |
| 1990 | 426 | 2.48% |
| 1991 | 475 | 2.77% |
| 1992 | 487 | 2.84% |
| 1993 | 623 | 3.63% |
| 1994 | 793 | 4.62% |
| 1995 | 800 | 4.66% |
| 1996 | 1,050 | 6.12% |
| 1997 | 1,235 | 7.20% |
| 1998 | 1,657 | 9.66% |
| 1999 | 2,066 | 12.04% |
| 2000 | 2,369 | 13.81% |
| 2001 | 2,695 | 15.71% |
| 2002 | 938 | 5.47% |
| **TOTAL** | **17,159** | **100.00%** |

**PREVIOUS SALE YEAR ($P_2$)**
***All Lee County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 5 | .03% |
| 1971 | 0 | .00% |
| 1972 | 4 | .02% |
| 1973 | 2 | .01% |
| 1974 | 4 | .02% |
| 1975 | 5 | .03% |
| 1976 | 15 | .09% |
| 1977 | 186 | 1.08% |
| 1978 | 241 | 1.40% |
| 1979 | 262 | 1.53% |
| 1980 | 214 | 1.25% |
| 1981 | 253 | 1.47% |
| 1982 | 208 | 1.21% |
| 1983 | 320 | 1.86% |
| 1984 | 358 | 2.09% |
| 1985 | 518 | 3.02% |
| 1986 | 622 | 3.62% |
| 1987 | 860 | 5.01% |
| 1988 | 960 | 5.59% |
| 1989 | 1,089 | 6.35% |
| 1990 | 983 | 5.73% |
| 1991 | 867 | 5.05% |
| 1992 | 941 | 5.48% |
| 1993 | 993 | 5.79% |
| 1994 | 1,149 | 6.70% |
| 1995 | 1,038 | 6.05% |
| 1996 | 1,028 | 5.99% |
| 1997 | 1,088 | 6.34% |
| 1998 | 1,009 | 5.88% |
| 1999 | 961 | 5.60% |
| 2000 | 694 | 4.04% |
| 2001 | 187 | 1.09% |
| 2002 | 95 | .55% |
| **TOTAL** | **17,159** | **100.00%** |

## Escambia County (Pensacola)

**MOST RECENT SALE YEAR ($P_1$)**
***All Escambia County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 9 | .06% |
| 1971 | 29 | .18% |
| 1972 | 64 | .40% |
| 1973 | 92 | .57% |
| 1974 | 148 | .92% |
| 1975 | 165 | 1.02% |
| 1976 | 192 | 1.19% |
| 1977 | 56 | .35% |
| 1978 | 58 | .36% |
| 1979 | 210 | 1.30% |
| 1980 | 131 | .81% |
| 1981 | 148 | .92% |
| 1982 | 117 | .73% |
| 1983 | 196 | 1.22% |
| 1984 | 198 | 1.23% |
| 1985 | 238 | 1.48% |
| 1986 | 273 | 1.69% |
| 1987 | 329 | 2.04% |
| 1988 | 307 | 1.90% |
| 1989 | 351 | 2.18% |
| 1990 | 404 | 2.51% |
| 1991 | 429 | 2.66% |
| 1992 | 645 | 4.00% |
| 1993 | 750 | 4.65% |
| 1994 | 930 | 5.77% |
| 1995 | 846 | 5.25% |
| 1996 | 1,185 | 7.35% |
| 1997 | 1,101 | 6.83% |
| 1998 | 1,295 | 8.03% |
| 1999 | 1,583 | 9.82% |
| 2000 | 1,559 | 9.67% |
| 2001 | 1,703 | 10.57% |
| 2002 | 378 | 2.35% |
| **TOTAL** | **16,119** | **100.00%** |

**PREVIOUS SALE YEAR ($P_2$)**
***All Escambia County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 212 | 1.32% |
| 1971 | 261 | 1.62% |
| 1972 | 319 | 1.98% |
| 1973 | 367 | 2.28% |
| 1974 | 346 | 2.15% |
| 1975 | 324 | 2.01% |
| 1976 | 394 | 2.44% |
| 1977 | 140 | .87% |
| 1978 | 151 | .94% |
| 1979 | 455 | 2.82% |
| 1980 | 419 | 2.60% |
| 1981 | 366 | 2.27% |
| 1982 | 357 | 2.21% |
| 1983 | 454 | 2.82% |
| 1984 | 539 | 3.34% |
| 1985 | 526 | 3.26% |
| 1986 | 608 | 3.77% |
| 1987 | 638 | 3.96% |
| 1988 | 631 | 3.91% |
| 1989 | 652 | 4.04% |
| 1990 | 698 | 4.33% |
| 1991 | 694 | 4.31% |
| 1992 | 868 | 5.38% |
| 1993 | 839 | 5.21% |
| 1994 | 868 | 5.38% |
| 1995 | 853 | 5.29% |
| 1996 | 954 | 5.92% |
| 1997 | 738 | 4.58% |
| 1998 | 613 | 3.80% |
| 1999 | 447 | 2.77% |
| 2000 | 275 | 1.71% |
| 2001 | 89 | .55% |
| 2002 | 24 | .15% |
| **TOTAL** | **16,119** | **100.00%** |

## Volusia County (Daytona)

**MOST RECENT SALE YEAR ($P_1$)**
***All Volusia County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 0 | .00% |
| 1971 | 0 | .00% |
| 1972 | 0 | .00% |
| 1973 | 0 | .00% |
| 1974 | 1 | .00% |
| 1975 | 2 | .01% |
| 1976 | 7 | .03% |
| 1977 | 111 | .48% |
| 1978 | 230 | .99% |
| 1979 | 254 | 1.09% |
| 1980 | 233 | 1.00% |
| 1981 | 200 | .86% |
| 1982 | 166 | .71% |
| 1983 | 228 | .98% |
| 1984 | 293 | 1.26% |
| 1985 | 363 | 1.56% |
| 1986 | 450 | 1.94% |
| 1987 | 560 | 2.41% |
| 1988 | 544 | 2.34% |
| 1989 | 653 | 2.81% |
| 1990 | 686 | 2.95% |
| 1991 | 640 | 2.75% |
| 1992 | 818 | 3.52% |
| 1993 | 1,013 | 4.36% |
| 1994 | 1,197 | 5.15% |
| 1995 | 1,215 | 5.23% |
| 1996 | 1,354 | 5.83% |
| 1997 | 1,526 | 6.57% |
| 1998 | 2,193 | 9.44% |
| 1999 | 2,451 | 10.55% |
| 2000 | 2,611 | 11.24% |
| 2001 | 2,508 | 10.79% |
| 2002 | 728 | 3.13% |
| **TOTAL** | **23,235** | **100.00%** |

**PREVIOUS SALE YEAR ($P_2$)**
***All Volusia County***

| *Years* | *Sales* | *% of Total* |
|---|---|---|
| 1970 | 98 | .42% |
| 1971 | 158 | .68% |
| 1972 | 192 | .83% |
| 1973 | 276 | 1.19% |
| 1974 | 255 | 1.10% |
| 1975 | 278 | 1.20% |
| 1976 | 393 | 1.69% |
| 1977 | 539 | 2.32% |
| 1978 | 656 | 2.82% |
| 1979 | 821 | 3.53% |
| 1980 | 678 | 2.92% |
| 1981 | 593 | 2.55% |
| 1982 | 453 | 1.95% |
| 1983 | 673 | 2.90% |
| 1984 | 803 | 3.46% |
| 1985 | 896 | 3.86% |
| 1986 | 1,039 | 4.47% |
| 1987 | 1,179 | 5.07% |
| 1988 | 1,182 | 5.09% |
| 1989 | 1,153 | 4.96% |
| 1990 | 1,181 | 5.08% |
| 1991 | 1,045 | 4.50% |
| 1992 | 1,034 | 4.45% |
| 1993 | 1,146 | 4.93% |
| 1994 | 1,114 | 4.79% |
| 1995 | 984 | 4.23% |
| 1996 | 976 | 4.20% |
| 1997 | 892 | 3.84% |
| 1998 | 915 | 3.94% |
| 1999 | 812 | 3.49% |
| 2000 | 599 | 2.58% |
| 2001 | 178 | .77% |
| 2002 | 44 | .19% |
| **TOTAL** | **23,235** | **100.00%** |

# APPENDIX III

## *REGRESSION SUMMARY OUTPUTS*

## Dade County (Miami)

SUMMARY OUTPUT - WATERFRONT (0-250m)

| *Regression Statistics* | |
|---|---|
| R Square | 0.6162 |
| Adjusted R Square | 0.6123 |
| Root MSE | 0.2375 |
| Observations | 2447 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Prob > F* |
|---|---|---|---|---|---|
| Regression | 25 | 219.2810 | 8.7712 | 155.56 | 0 |
| Residual | 2422 | 136.5621 | 0.0654 | | |
| Total | 2447 | 355.8431 | 0.1454 | | |

| *Dummy* | *Coefficients* | *Standard Error* | *t Stat* | P>\|t\| | *Lower 95%* | *Upper 95%* | *Accumulated Appreciation* | *INDEX LEVEL* |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 12.53% | 0.066892 | 1.87 | 0.061 | -0.0058348 | 0.256508 | 0.0296626 | 1.030106917 |
| d1979 | 13.00% | 0.0482549 | 2.69 | 0.007 | 0.0353632 | 0.2246133 | 0.1582445 | 1.17145258 |
| d1980 | 16.40% | 0.0407043 | 4.03 | 0 | 0.0842232 | 0.2438607 | 0.3317546 | 1.393410864 |
| d1981 | 6.52% | 0.0377224 | 1.73 | 0.084 | -0.0088169 | 0.1391259 | 0.4232288 | 1.526883607 |
| d1982 | 1.83% | 0.044929 | 0.41 | 0.684 | -0.0698259 | 0.1063807 | 0.4149752 | 1.514333185 |
| d1983 | -4.59% | 0.042501 | -1.08 | 0.281 | -0.1291966 | 0.0374875 | 0.4179871 | 1.51890108 |
| d1984 | 3.51% | 0.039503 | 0.89 | 0.374 | -0.0423382 | 0.112588 | 0.4297798 | 1.536919057 |
| d1985 | -4.51% | 0.0387893 | -1.16 | 0.245 | -0.1211821 | 0.0309451 | 0.4275746 | 1.533533577 |
| d1986 | 0.19% | 0.0333609 | 0.06 | 0.956 | -0.0635657 | 0.0672722 | 0.4489737 | 1.566703452 |
| d1987 | 5.58% | 0.0269372 | 2.07 | 0.039 | 0.0029389 | 0.1085835 | 0.4788332 | 1.614189866 |
| d1988 | 7.64% | 0.0249982 | 3.06 | 0.002 | 0.027403 | 0.1254432 | 0.5197834 | 1.681663362 |
| d1989 | -0.46% | 0.0250944 | -0.18 | 0.855 | -0.0537811 | 0.0446363 | 0.5641367 | 1.757929507 |
| d1990 | 3.17% | 0.024777 | 1.28 | 0.201 | -0.0168903 | 0.0802821 | 0.5914073 | 1.806528956 |
| d1991 | -0.27% | 0.0260327 | -0.1 | 0.917 | -0.0537781 | 0.0483192 | 0.6001925 | 1.822469592 |
| d1992 | 2.39% | 0.0248317 | 0.96 | 0.336 | -0.0247765 | 0.0726108 | 0.5393313 | 1.714859752 |
| d1993 | 5.90% | 0.0226523 | 2.61 | 0.009 | 0.0146111 | 0.1034507 | 0.6140206 | 1.847845933 |
| d1994 | 1.11% | 0.0209936 | 0.53 | 0.596 | -0.0300369 | 0.0522975 | 0.7244939 | 2.063686404 |
| d1995 | 8.41% | 0.0206698 | 4.07 | 0 | 0.043564 | 0.1246287 | 0.7613353 | 2.141133368 |
| d1996 | -5.08% | 0.0204127 | -2.49 | 0.013 | -0.090837 | -0.0107806 | 0.7828321 | 2.18765917 |
| d1997 | 3.92% | 0.019225 | 2.04 | 0.042 | 0.0015114 | 0.0769098 | 0.8128543 | 2.254333356 |
| d1998 | 6.11% | 0.0177722 | 3.44 | 0.001 | 0.0262722 | 0.0959727 | 0.8391721 | 2.31445005 |
| d1999 | 9.55% | 0.015892 | 6.01 | 0 | 0.0643368 | 0.1266636 | 0.8928774 | 2.442146584 |
| d2000 | 13.24% | 0.0158327 | 8.36 | 0 | 0.1013087 | 0.1634029 | 0.970825 | 2.640121662 |
| d2001 | 17.10% | 0.0166861 | 10.25 | 0 | 0.1382508 | 0.2036918 | 1.0999446 | 3.003999598 |
| d2002 | 8.75% | 0.0282686 | 3.1 | 0.002 | 0.0320744 | 0.1429407 | 1.1702961 | 3.222946812 |

SUMMARY OUTPUT - WATER ACCESS (251-500m)

| Regression Statistics | |
|---|---|
| R Square | 0.6304 |
| Adjusted R Square | 0.625 |
| Root MSE | 0.224 |
| Observations | 1733 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 146.2002 | 5.8480 | 116.53 | 0 |
| Residual | 1708 | 85.7150 | 0.0502 | | |
| Total | 1733 | 231.9152 | 0.1338 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 2.98% | 0.0640955 | 0.46 | 0.642 | -0.0959278 | 0.1554999 | 0.029786 | 1.03023404 |
| d1979 | 11.48% | 0.049369 | 2.33 | 0.02 | 0.0179685 | 0.2116286 | 0.1445845 | 1.155559336 |
| d1980 | 20.83% | 0.042662 | 4.88 | 0 | 0.1245938 | 0.2919443 | 0.3528535 | 1.423122641 |
| d1981 | 6.61% | 0.042227 | 1.56 | 0.118 | -0.0167467 | 0.1488975 | 0.4189289 | 1.520332255 |
| d1982 | 2.70% | 0.0445123 | 0.61 | 0.545 | -0.0603247 | 0.114284 | 0.4459085 | 1.561908545 |
| d1983 | -2.76% | 0.0401574 | -0.69 | 0.493 | -0.1063209 | 0.0512048 | 0.4183504 | 1.519452997 |
| d1984 | -0.70% | 0.0358512 | -0.2 | 0.845 | -0.0773118 | 0.0633219 | 0.4113555 | 1.508861662 |
| d1985 | 0.20% | 0.0331107 | 0.06 | 0.952 | -0.0629408 | 0.0669427 | 0.4133564 | 1.511883765 |
| d1986 | 3.23% | 0.0307113 | 1.05 | 0.293 | -0.0279015 | 0.0925698 | 0.4456905 | 1.561568086 |
| d1987 | 1.56% | 0.0299806 | 0.52 | 0.603 | -0.043216 | 0.0743893 | 0.4612771 | 1.586098298 |
| d1988 | 7.20% | 0.0294987 | 2.44 | 0.015 | 0.0141841 | 0.1298987 | 0.5333185 | 1.704579581 |
| d1989 | -0.24% | 0.0284186 | -0.08 | 0.933 | -0.058145 | 0.0533328 | 0.5309124 | 1.700483122 |
| d1990 | 2.74% | 0.0289641 | 0.94 | 0.345 | -0.029443 | 0.0841749 | 0.5582783 | 1.747660961 |
| d1991 | -1.99% | 0.0276768 | -0.72 | 0.473 | -0.0741682 | 0.0343998 | 0.5383941 | 1.713253338 |
| d1992 | 4.18% | 0.0252895 | 1.65 | 0.099 | -0.0078479 | 0.0913556 | 0.580148 | 1.786302784 |
| d1993 | 2.05% | 0.0243088 | 0.84 | 0.399 | -0.0271807 | 0.0681756 | 0.6006455 | 1.823295358 |
| d1994 | 2.95% | 0.0225651 | 1.31 | 0.191 | -0.0147088 | 0.0738076 | 0.6301949 | 1.877976561 |
| d1995 | 5.40% | 0.022225 | 2.43 | 0.015 | 0.010451 | 0.0976332 | 0.684237 | 1.982258795 |
| d1996 | 1.51% | 0.022335 | 0.68 | 0.498 | -0.0286811 | 0.0589326 | 0.6993627 | 2.012469752 |
| d1997 | 1.38% | 0.02163 | 0.64 | 0.525 | -0.0286592 | 0.0561889 | 0.7131276 | 2.040362728 |
| d1998 | 7.02% | 0.0208879 | 3.36 | 0.001 | 0.0292088 | 0.111146 | 0.783305 | 2.188693959 |
| d1999 | 6.87% | 0.0201778 | 3.4 | 0.001 | 0.0290852 | 0.1082369 | 0.8519661 | 2.344251357 |
| d2000 | 12.77% | 0.0192603 | 6.63 | 0 | 0.0899632 | 0.1655158 | 0.9797056 | 2.663671941 |
| d2001 | 17.55% | 0.019837 | 8.85 | 0 | 0.1366036 | 0.2144183 | 1.1552166 | 3.174710985 |
| d2002 | 6.30% | 0.0322129 | 1.96 | 0.051 | -0.0001555 | 0.1262062 | 1.2182419 | 3.381237951 |

SUMMARY OUTPUT - TRANSITION (501-2500m)

| Regression Statistics | |
|---|---|
| R Square | 0.5627 |
| Adjusted R Square | 0.5616 |
| Root MSE | 0.2544 |
| Observations | 9983 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 829.1021 | 33.1641 | 512.47 | 0 |
| Residual | 9958 | 644.4248 | 0.0647 | | |
| Total | 9983 | 1473.5269 | 0.1476 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 2.27% | 0.0264882 | 0.86 | 0.392 | -0.0292653 | 0.0745793 | 0.022657 | 1.022915619 |
| d1979 | 13.49% | 0.0192119 | 7.02 | 0 | 0.0972642 | 0.1725827 | 0.1575805 | 1.170674994 |
| d1980 | 16.98% | 0.0174193 | 9.75 | 0 | 0.1356428 | 0.2039336 | 0.3273687 | 1.387312885 |
| d1981 | 8.65% | 0.016986 | 5.09 | 0 | 0.0532083 | 0.1198004 | 0.4138731 | 1.512665157 |
| d1982 | -1.07% | 0.0186612 | -0.57 | 0.566 | -0.0472808 | 0.0258787 | 0.4031721 | 1.496564428 |
| d1983 | 3.30% | 0.018112 | 1.82 | 0.069 | -0.0025108 | 0.0684957 | 0.4361646 | 1.546763371 |
| d1984 | -0.50% | 0.0169328 | -0.3 | 0.766 | -0.0382351 | 0.0281484 | 0.4311213 | 1.538982217 |
| d1985 | -0.51% | 0.0162783 | -0.31 | 0.753 | -0.0370283 | 0.0267892 | 0.4260017 | 1.531123378 |
| d1986 | 2.28% | 0.0147825 | 1.54 | 0.124 | -0.006209 | 0.0517443 | 0.4487693 | 1.566383251 |
| d1987 | 3.65% | 0.0132926 | 2.75 | 0.006 | 0.0104678 | 0.0625803 | 0.4852933 | 1.624651449 |
| d1988 | 4.94% | 0.0126022 | 3.92 | 0 | 0.024747 | 0.0741526 | 0.5347431 | 1.707009655 |
| d1989 | 3.61% | 0.01252 | 2.88 | 0.004 | 0.0115638 | 0.0606474 | 0.5708487 | 1.769768417 |
| d1990 | 1.61% | 0.0126201 | 1.28 | 0.202 | -0.0086257 | 0.0408501 | 0.5869609 | 1.798514237 |
| d1991 | 0.19% | 0.0127751 | 0.15 | 0.884 | -0.0231768 | 0.0269067 | 0.5888258 | 1.801871415 |
| d1992 | -2.92% | 0.0128804 | -2.27 | 0.023 | -0.0544421 | -0.0039457 | 0.5596319 | 1.750028196 |
| d1993 | 3.72% | 0.0117374 | 3.17 | 0.002 | 0.0141875 | 0.060203 | 0.5968272 | 1.816346743 |
| d1994 | 8.03% | 0.010769 | 7.45 | 0 | 0.0591687 | 0.1013876 | 0.6771054 | 1.968172407 |
| d1995 | 3.93% | 0.0110145 | 3.57 | 0 | 0.017677 | 0.0608582 | 0.716373 | 2.046995278 |
| d1996 | 3.06% | 0.0110445 | 2.77 | 0.006 | 0.0089769 | 0.0522756 | 0.7469993 | 2.110657056 |
| d1997 | 2.99% | 0.0109059 | 2.75 | 0.006 | 0.0085673 | 0.0513227 | 0.7769443 | 2.174816515 |
| d1998 | 5.32% | 0.0104622 | 5.08 | 0 | 0.0326856 | 0.0737015 | 0.8301379 | 2.293635011 |
| d1999 | 5.35% | 0.010113 | 5.29 | 0 | 0.0336363 | 0.0732832 | 0.8835976 | 2.41958878 |
| d2000 | 9.46% | 0.0100354 | 9.42 | 0 | 0.0749073 | 0.1142503 | 0.9781764 | 2.659601767 |
| d2001 | 15.59% | 0.0104619 | 14.9 | 0 | 0.1354049 | 0.1764197 | 1.1340887 | 3.108339622 |
| d2002 | 6.15% | 0.0167325 | 3.67 | 0 | 0.0286546 | 0.0942526 | 1.1955423 | 3.305349776 |

SUMMARY OUTPUT - INLAND (2500-MAX)

| Regression Statistics | |
|---|---|
| R Square | 0.4611 |
| Adjusted R Square | 0.4606 |
| Root MSE | 0.2985 |
| Observations | 26855 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 2045.8330 | 81.8333 | 918.11 | 0 |
| Residual | 26830 | 2391.4204 | 0.0891 | | |
| Total | 26855 | 4437.2534 | 0.1652 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 2.46% | 0.0232572 | 1.06 | 0.291 | -0.0210246 | 0.0701462 | 0.0245608 | 1.024864901 |
| d1979 | 12.57% | 0.0173934 | 7.23 | 0 | 0.0915765 | 0.1597604 | 0.1502293 | 1.162100682 |
| d1980 | 17.55% | 0.0141826 | 12.37 | 0 | 0.147695 | 0.2032924 | 0.325723 | 1.385031662 |
| d1981 | 9.61% | 0.0130432 | 7.37 | 0 | 0.0705349 | 0.1216656 | 0.4218233 | 1.524739079 |
| d1982 | -0.87% | 0.0146361 | -0.59 | 0.552 | -0.0373897 | 0.0199853 | 0.4131211 | 1.511528061 |
| d1983 | -0.56% | 0.0141983 | -0.39 | 0.696 | -0.0333802 | 0.0222788 | 0.4075704 | 1.503161264 |
| d1984 | 1.84% | 0.0124975 | 1.48 | 0.14 | -0.0060507 | 0.0429406 | 0.4260154 | 1.531144355 |
| d1985 | 0.04% | 0.011978 | 0.04 | 0.971 | -0.0230382 | 0.0239167 | 0.4264547 | 1.531817134 |
| d1986 | 2.36% | 0.0112813 | 2.09 | 0.036 | 0.0015039 | 0.045728 | 0.4500706 | 1.568422912 |
| d1987 | 2.62% | 0.0100328 | 2.61 | 0.009 | 0.0064883 | 0.0458178 | 0.4762237 | 1.609983129 |
| d1988 | 3.19% | 0.0096084 | 3.32 | 0.001 | 0.0130752 | 0.0507409 | 0.5081318 | 1.662183002 |
| d1989 | 5.65% | 0.0095077 | 5.95 | 0 | 0.0378888 | 0.0751601 | 0.5646563 | 1.758843164 |
| d1990 | 3.05% | 0.0092017 | 3.32 | 0.001 | 0.0124745 | 0.0485462 | 0.5951667 | 1.813333202 |
| d1991 | 1.54% | 0.009286 | 1.65 | 0.098 | -0.0028456 | 0.0335566 | 0.6105222 | 1.841392723 |
| d1992 | -8.56% | 0.0089651 | -9.55 | 0 | -0.1032039 | -0.0680597 | 0.5248904 | 1.690273584 |
| d1993 | 9.17% | 0.0079298 | 11.57 | 0 | 0.0762016 | 0.1072873 | 0.6166348 | 1.852682891 |
| d1994 | 13.51% | 0.0074359 | 18.17 | 0 | 0.1205315 | 0.1496809 | 0.751741 | 2.120688924 |
| d1995 | 3.15% | 0.0077669 | 4.06 | 0 | 0.0163129 | 0.0467601 | 0.7832775 | 2.18863377 |
| d1996 | 2.35% | 0.0077347 | 3.03 | 0.002 | 0.0082919 | 0.0386125 | 0.8067297 | 2.240568661 |
| d1997 | 3.34% | 0.0076312 | 4.38 | 0 | 0.0184472 | 0.0483623 | 0.8401345 | 2.316678549 |
| d1998 | 1.02% | 0.007421 | 1.37 | 0.169 | -0.0043422 | 0.0247487 | 0.8503377 | 2.340437084 |
| d1999 | 4.85% | 0.0070623 | 6.86 | 0 | 0.0346265 | 0.0623116 | 0.8988068 | 2.456670063 |
| d2000 | 6.38% | 0.0069066 | 9.24 | 0 | 0.0502536 | 0.0773282 | 0.9625977 | 2.618489697 |
| d2001 | 11.49% | 0.0070429 | 16.32 | 0 | 0.10111 | 0.1287189 | 1.0775121 | 2.937362589 |
| d2002 | 7.76% | 0.0102616 | 7.56 | 0 | 0.0574556 | 0.0976823 | 1.155081 | 3.174280524 |

SUMMARY OUTPUT - ALL DADE COUNTY

| Regression Statistics | |
|---|---|
| R Square | 0.492 |
| Adjusted R Square | 0.4917 |
| Root MSE | 0.2838 |
| Observations | 41018 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 3197.0880 | 1270.8835 | 1587.89 | 0 |
| Residual | 40993 | 3301.4507 | 0.0805 | | |
| Total | 41018 | 6498.5387 | 0.1584 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 2.97% | 0.0168832 | 1.76 | 0.079 | -0.0034288 | 0.062754 | 0.0296626 | 1.030106917 |
| d1979 | 12.86% | 0.0124914 | 10.29 | 0 | 0.1040985 | 0.1530652 | 0.1582445 | 1.17145258 |
| d1980 | 17.35% | 0.0105517 | 16.44 | 0 | 0.1528285 | 0.1941918 | 0.3317546 | 1.393410864 |
| d1981 | 9.15% | 0.0099245 | 9.22 | 0 | 0.072022 | 0.1109265 | 0.4232288 | 1.526883607 |
| d1982 | -0.83% | 0.011075 | -0.75 | 0.456 | -0.0299609 | 0.0134537 | 0.4149752 | 1.514333185 |
| d1983 | 0.30% | 0.0107062 | 0.28 | 0.778 | -0.0179724 | 0.0239963 | 0.4179871 | 1.51890108 |
| d1984 | 1.18% | 0.0095997 | 1.23 | 0.219 | -0.007023 | 0.0306084 | 0.4297798 | 1.536919057 |
| d1985 | -0.22% | 0.0092014 | -0.24 | 0.811 | -0.0202401 | 0.0158297 | 0.4275746 | 1.533533577 |
| d1986 | 2.14% | 0.0085452 | 2.5 | 0.012 | 0.0046503 | 0.0381478 | 0.4489737 | 1.566703452 |
| d1987 | 2.99% | 0.0076191 | 3.92 | 0 | 0.0149259 | 0.044793 | 0.4788332 | 1.614189866 |
| d1988 | 4.10% | 0.0072703 | 5.63 | 0 | 0.0267002 | 0.0552001 | 0.5197834 | 1.681663362 |
| d1989 | 4.44% | 0.0072004 | 6.16 | 0 | 0.0302404 | 0.0584662 | 0.5641367 | 1.757929507 |
| d1990 | 2.73% | 0.0070658 | 3.86 | 0 | 0.0134214 | 0.0411198 | 0.5914073 | 1.806528956 |
| d1991 | 0.88% | 0.0071345 | 1.23 | 0.218 | -0.0051985 | 0.0227689 | 0.6001925 | 1.822469592 |
| d1992 | -6.09% | 0.0069409 | -8.77 | 0 | -0.0744654 | -0.0472569 | 0.5393313 | 1.714859752 |
| d1993 | 7.47% | 0.0062154 | 12.02 | 0 | 0.0625069 | 0.0868717 | 0.6140206 | 1.847845933 |
| d1994 | 11.05% | 0.0057925 | 19.07 | 0 | 0.0991198 | 0.1218269 | 0.7244939 | 2.063686404 |
| d1995 | 3.68% | 0.0059871 | 6.15 | 0 | 0.0251065 | 0.0485763 | 0.7613353 | 2.141133368 |
| d1996 | 2.15% | 0.005971 | 3.6 | 0 | 0.0097935 | 0.0332001 | 0.7828321 | 2.18765917 |
| d1997 | 3.00% | 0.0058701 | 5.11 | 0 | 0.0185166 | 0.0415278 | 0.8128543 | 2.254333356 |
| d1998 | 2.63% | 0.0056692 | 4.64 | 0 | 0.0152061 | 0.0374296 | 0.8391721 | 2.31445005 |
| d1999 | 5.37% | 0.0053923 | 9.96 | 0 | 0.0431363 | 0.0642742 | 0.8928774 | 2.442146584 |
| d2000 | 7.79% | 0.0052935 | 14.73 | 0 | 0.0675722 | 0.088323 | 0.970825 | 2.640121662 |
| d2001 | 12.91% | 0.0054392 | 23.74 | 0 | 0.1184586 | 0.1397806 | 1.0999446 | 3.003999598 |
| d2002 | 7.04% | 0.0081957 | 8.58 | 0 | 0.0542878 | 0.0864153 | 1.1702961 | 3.222946812 |

# Lee County (Ft. Myers)

SUMMARY OUTPUT - WATERFRONT (0-250m)

| *Regression Statistics* | |
|---|---|
| R Square | 0.3465 |
| Adjusted R Square | 0.3425 |
| Root MSE | 0.3004 |
| Observations | 4073 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Prob > F* |
|---|---|---|---|---|---|
| Regression | 25 | 193.7351 | 7.7494 | 85.87 | 0 |
| Residual | 4048 | 365.3269 | 0.0902 | | |
| Total | 4073 | 559.062 | 0.13726 | | |

| *Dummy* | *Coefficients* | *Standard Error* | *t Stat* | *P>\|t\|* | *Lower 95%* | *Upper 95%* | *Accumulated Appreciation* | *INDEX LEVEL* |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 21.38% | 0.0548968 | 3.9 | 0 | 0.1061956 | 0.3214516 | 0.2138236 | 1.238404181 |
| d1979 | 11.50% | 0.0494779 | 2.32 | 0.02 | 0.0180065 | 0.2120141 | 0.3288339 | 1.389347066 |
| d1980 | 4.93% | 0.046886 | 1.05 | 0.294 | -0.0426649 | 0.1411796 | 0.3780912 | 1.459496043 |
| d1981 | 7.72% | 0.0495163 | 1.56 | 0.119 | -0.0198926 | 0.1742659 | 0.4552779 | 1.576611462 |
| d1982 | 0.66% | 0.0495418 | 0.13 | 0.894 | -0.0905572 | 0.1037011 | 0.4618498 | 1.587006917 |
| d1983 | 2.44% | 0.0462733 | 0.53 | 0.598 | -0.0663351 | 0.1151072 | 0.4862358 | 1.626183405 |
| d1984 | -5.34% | 0.0410565 | -1.3 | 0.194 | -0.1338695 | 0.0271171 | 0.4328596 | 1.541659756 |
| d1985 | -0.49% | 0.0363454 | -0.13 | 0.893 | -0.0761629 | 0.0663512 | 0.4279538 | 1.534115203 |
| d1986 | 3.13% | 0.031013 | 1.01 | 0.312 | -0.0294582 | 0.0921469 | 0.4592981 | 1.582962514 |
| d1987 | 7.69% | 0.0274815 | 2.8 | 0.005 | 0.0230593 | 0.130817 | 0.5362363 | 1.709560466 |
| d1988 | 4.62% | 0.0237728 | 1.94 | 0.052 | -0.0003859 | 0.0928296 | 0.5824582 | 1.790434271 |
| d1989 | 4.51% | 0.0223362 | 2.02 | 0.043 | 0.0013402 | 0.0889225 | 0.6275896 | 1.873090237 |
| d1990 | 5.44% | 0.0218464 | 2.49 | 0.013 | 0.0115522 | 0.0972142 | 0.6819728 | 1.977775642 |
| d1991 | 3.48% | 0.0227634 | 1.53 | 0.126 | -0.0098138 | 0.0794438 | 0.7167878 | 2.047844548 |
| d1992 | -1.77% | 0.0235569 | -0.75 | 0.453 | -0.0638768 | 0.028492 | 0.6990954 | 2.01193189 |
| d1993 | -1.86% | 0.0235536 | -0.79 | 0.429 | -0.0648131 | 0.027543 | 0.6804603 | 1.974786517 |
| d1994 | 0.64% | 0.0221816 | 0.29 | 0.774 | -0.0371237 | 0.0498525 | 0.6868247 | 1.987394929 |
| d1995 | -1.03% | 0.021052 | -0.49 | 0.626 | -0.0515377 | 0.0310094 | 0.6765605 | 1.967100242 |
| d1996 | 1.39% | 0.020722 | 0.67 | 0.502 | -0.0267054 | 0.0545478 | 0.6904817 | 1.994676137 |
| d1997 | 3.06% | 0.0192223 | 1.59 | 0.112 | -0.0071191 | 0.0682535 | 0.7210489 | 2.056589236 |
| d1998 | 4.83% | 0.0178761 | 2.7 | 0.007 | 0.0132291 | 0.0833232 | 0.769325 | 2.158308903 |
| d1999 | 7.46% | 0.0168603 | 4.43 | 0 | 0.0415638 | 0.1076747 | 0.8439443 | 2.325521465 |
| d2000 | 6.48% | 0.0162436 | 3.99 | 0 | 0.032957 | 0.0966498 | 0.9087477 | 2.481213363 |
| d2001 | 11.21% | 0.0166591 | 6.73 | 0 | 0.0794472 | 0.1447693 | 1.0208559 | 2.775569357 |
| d2002 | 5.84% | 0.0244667 | 2.39 | 0.017 | 0.0104605 | 0.106397 | 1.0792846 | 2.942573681 |

**SUMMARY OUTPUT - WATER ACCESS (251-500m)**

| *Regression Statistics* | |
|---|---|
| R Square | 0.2773 |
| Adjusted R Square | 0.2646 |
| Root MSE | 0.3368 |
| Observations | 1447 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Prob > F* |
|---|---|---|---|---|---|
| Regression | 25 | 61.9115 | 2.47646 | 21.83 | 0 |
| Residual | 1422 | 161.3317 | 0.11345 | | |
| Total | 1447 | 223.2432 | 0.15428 | | |

| *Dummy* | *Coefficients* | *Standard Error* | *t Stat* | *P>\|t\|* | *Lower 95%* | *Upper 95%* | *Accumulated Appreciation* | *INDEX LEVEL* |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 25.14% | 0.0900385 | 2.79 | 0.005 | 0.0748098 | 0.4280551 | 0.2514324 | 1.285865973 |
| d1979 | 4.67% | 0.0842493 | 0.55 | 0.58 | -0.1185879 | 0.2119446 | 0.2981107 | 1.347310927 |
| d1980 | 20.67% | 0.0914864 | 2.26 | 0.024 | 0.0272129 | 0.3861385 | 0.5047864 | 1.656631626 |
| d1981 | 15.02% | 0.1048628 | 1.43 | 0.152 | -0.0554729 | 0.355932 | 0.6550159 | 1.925173127 |
| d1982 | -24.24% | 0.096049 | -2.52 | 0.012 | -0.430824 | 0.0539981 | 0.4126049 | 1.510748011 |
| d1983 | 13.08% | 0.0822869 | 1.59 | 0.112 | -0.0306482 | 0.2921852 | 0.5433734 | 1.721805415 |
| d1984 | -5.14% | 0.0740311 | -0.69 | 0.488 | -0.1965886 | 0.0938553 | 0.4920068 | 1.635595241 |
| d1985 | 3.68% | 0.0652724 | 0.56 | 0.573 | -0.0912648 | 0.1648163 | 0.5287825 | 1.696865117 |
| d1986 | 0.36% | 0.0547646 | 0.07 | 0.948 | -0.1038658 | 0.1109903 | 0.5323447 | 1.702920469 |
| d1987 | 8.00% | 0.0488822 | 1.64 | 0.102 | -0.0159023 | 0.1758756 | 0.6123313 | 1.844727002 |
| d1988 | 1.40% | 0.0452938 | 0.31 | 0.757 | -0.0748613 | 0.1028384 | 0.6263198 | 1.870713296 |
| d1989 | 7.55% | 0.0437867 | 1.72 | 0.085 | -0.0103934 | 0.1613936 | 0.7018199 | 2.017420873 |
| d1990 | 4.92% | 0.0436343 | 1.13 | 0.259 | -0.0363683 | 0.1348208 | 0.7510461 | 2.119215769 |
| d1991 | -1.89% | 0.0466219 | -0.41 | 0.685 | -0.110385 | 0.0725252 | 0.7321162 | 2.079476543 |
| d1992 | -2.30% | 0.0462331 | -0.5 | 0.618 | -0.1137272 | 0.0676574 | 0.7090813 | 2.032123489 |
| d1993 | -1.24% | 0.0416012 | -0.3 | 0.765 | -0.0940395 | 0.0691733 | 0.6966482 | 2.00701431 |
| d1994 | 4.81% | 0.0389088 | 1.24 | 0.216 | -0.0282011 | 0.1244487 | 0.744772 | 2.105961221 |
| d1995 | 4.90% | 0.039257 | 1.25 | 0.212 | -0.028012 | 0.1260038 | 0.7937679 | 2.211714264 |
| d1996 | 0.05% | 0.0392687 | 0.01 | 0.989 | -0.0765029 | 0.0775589 | 0.7942959 | 2.212882358 |
| d1997 | -4.09% | 0.0363489 | -1.12 | 0.261 | -0.1121644 | 0.030442 | 0.7534347 | 2.124283778 |
| d1998 | 9.45% | 0.0327499 | 2.88 | 0.004 | 0.0302131 | 0.1586996 | 0.8478911 | 2.33471797 |
| d1999 | 1.71% | 0.0320317 | 0.53 | 0.593 | -0.0457019 | 0.0799671 | 0.8650237 | 2.375062374 |
| d2000 | 9.59% | 0.0309252 | 3.1 | 0.002 | 0.0352362 | 0.1565642 | 0.9609239 | 2.614110535 |
| d2001 | 9.09% | 0.0314588 | 2.89 | 0.004 | 0.0292353 | 0.1526566 | 1.0518699 | 2.862999639 |
| d2002 | -3.81% | 0.0497565 | -0.77 | 0.444 | -0.1357143 | 0.0594937 | 1.0137596 | 2.755942805 |

**SUMMARY OUTPUT - TRANSITION (501-2500m)**

| *Regression Statistics* | |
|---|---|
| R Square | 0.2046 |
| Adjusted R Square | 0.2012 |
| Root MSE | 0.3766 |
| Observations | 5839 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Prob > F* |
|---|---|---|---|---|---|
| Regression | 25 | 212.1514 | 8.48566 | 59.84 | 0 |
| Residual | 5814 | 824.5356 | 0.14182 | | |
| Total | 5839 | 1036.687 | 0.17754 | | |

| *Dummy* | *Coefficients* | *Standard Error* | *t Stat* | *P>\|t\|* | *Lower 95%* | *Upper 95%* | *Accumulated Appreciation* | *INDEX LEVEL* |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 23.08% | 0.0553429 | 4.17 | 0 | 0.1222869 | 0.3392723 | 0.2307796 | 1.259581597 |
| d1979 | 7.63% | 0.0533159 | 1.43 | 0.152 | -0.0282072 | 0.1808308 | 0.3070914 | 1.359465218 |
| d1980 | 9.00% | 0.0531875 | 1.69 | 0.091 | -0.0142981 | 0.1942364 | 0.3970605 | 1.487445918 |
| d1981 | 11.84% | 0.0529825 | 2.23 | 0.026 | 0.0145012 | 0.2222322 | 0.5154272 | 1.674353633 |
| d1982 | -0.63% | 0.0531451 | -0.12 | 0.906 | -0.1104536 | 0.0979147 | 0.5091577 | 1.663889111 |
| d1983 | 1.61% | 0.0515234 | 0.31 | 0.755 | -0.0849486 | 0.1170616 | 0.5252142 | 1.690820983 |
| d1984 | -1.56% | 0.0440234 | -0.35 | 0.723 | -0.1018903 | 0.0707142 | 0.5096262 | 1.664668825 |
| d1985 | -0.61% | 0.0397411 | -0.15 | 0.877 | -0.0840449 | 0.0717697 | 0.5034886 | 1.654483044 |
| d1986 | 6.12% | 0.0339973 | 1.8 | 0.072 | -0.0054526 | 0.127842 | 0.5646833 | 1.758890654 |
| d1987 | 0.05% | 0.0297211 | 0.02 | 0.987 | -0.057762 | 0.0587668 | 0.5651857 | 1.759774543 |
| d1988 | 8.64% | 0.0267648 | 3.23 | 0.001 | 0.0339806 | 0.1389184 | 0.6516352 | 1.918675684 |
| d1989 | 1.92% | 0.0250416 | 0.77 | 0.444 | -0.0299225 | 0.0682593 | 0.6708036 | 1.955808377 |
| d1990 | 6.17% | 0.0240435 | 2.57 | 0.01 | 0.0145543 | 0.1088225 | 0.732492 | 2.080258157 |
| d1991 | -2.09% | 0.0245931 | -0.85 | 0.396 | -0.0690872 | 0.0273361 | 0.7116165 | 2.037281864 |
| d1992 | -0.91% | 0.0250034 | -0.37 | 0.714 | -0.0581655 | 0.0398665 | 0.702467 | 2.018726768 |
| d1993 | -1.91% | 0.0245181 | -0.78 | 0.437 | -0.0671172 | 0.0290121 | 0.6834144 | 1.980628859 |
| d1994 | 2.74% | 0.0221246 | 1.24 | 0.215 | -0.0159229 | 0.070822 | 0.710864 | 2.035749386 |
| d1995 | 2.32% | 0.0211048 | 1.1 | 0.272 | -0.0181643 | 0.0645823 | 0.734073 | 2.083549646 |
| d1996 | -0.92% | 0.0209424 | -0.44 | 0.661 | -0.0502382 | 0.0318715 | 0.7248896 | 2.064503166 |
| d1997 | 7.97% | 0.0201431 | 3.96 | 0 | 0.0401976 | 0.1191736 | 0.8045752 | 2.235746552 |
| d1998 | -1.63% | 0.0190261 | -0.86 | 0.392 | -0.053599 | 0.0209975 | 0.7882745 | 2.199597744 |
| d1999 | 4.26% | 0.0176765 | 2.41 | 0.016 | 0.0079263 | 0.0772313 | 0.8308533 | 2.295276464 |
| d2000 | 6.74% | 0.0169314 | 3.98 | 0 | 0.0341671 | 0.1005509 | 0.8982123 | 2.455210007 |
| d2001 | 8.76% | 0.016991 | 5.16 | 0 | 0.0542828 | 0.1209003 | 0.9858038 | 2.679965175 |
| d2002 | 8.42% | 0.0253337 | 3.32 | 0.001 | 0.0345699 | 0.133897 | 1.0700373 | 2.915488246 |

## SUMMARY OUTPUT - INLAND (2500-MAX)

| Regression Statistics | |
|---|---|
| R Square | 0.1684 |
| Adjusted R Square | 0.1648 |
| Root MSE | 0.3588 |
| Observations | 5800 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 150.5553 | 6.02210 | 46.79 | 0 |
| Residual | 5775 | 743.3622 | 0.12872 | | |
| Total | 5800 | 893.9175 | 0.15412 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 21.80% | 0.0613205 | 3.56 | 0 | 0.097816 | 0.3382383 | 0.2180271 | 1.243620769 |
| d1979 | 10.77% | 0.0553358 | 1.95 | 0.052 | -0.0007703 | 0.2161873 | 0.3257356 | 1.385049113 |
| d1980 | 9.22% | 0.0578571 | 1.59 | 0.111 | -0.0212059 | 0.2056372 | 0.4179513 | 1.518846705 |
| d1981 | 3.66% | 0.0592866 | 0.62 | 0.537 | -0.0796234 | 0.1528245 | 0.4545518 | 1.5754671 |
| d1982 | 0.22% | 0.0634843 | 0.04 | 0.972 | -0.1222149 | 0.1266913 | 0.45679 | 1.57899726 |
| d1983 | 1.54% | 0.0613522 | 0.25 | 0.802 | -0.1048968 | 0.1356498 | 0.4721665 | 1.603464338 |
| d1984 | -2.44% | 0.0501994 | -0.49 | 0.627 | -0.1228236 | 0.0739958 | 0.4477526 | 1.564791518 |
| d1985 | 5.02% | 0.0434795 | 1.16 | 0.248 | -0.0350151 | 0.1354571 | 0.4979736 | 1.645383685 |
| d1986 | 2.46% | 0.0364166 | 0.67 | 0.5 | -0.0468177 | 0.0959627 | 0.5225461 | 1.686315717 |
| d1987 | 2.25% | 0.0319946 | 0.7 | 0.482 | -0.0402093 | 0.0852336 | 0.5450582 | 1.724708758 |
| d1988 | 5.28% | 0.0267512 | 1.97 | 0.048 | 0.0003548 | 0.1052397 | 0.5978555 | 1.818215453 |
| d1989 | -1.20% | 0.0247641 | -0.49 | 0.627 | -0.0605862 | 0.0365075 | 0.5858162 | 1.796456655 |
| d1990 | 11.18% | 0.0242406 | 4.61 | 0 | 0.0642527 | 0.1592941 | 0.6975896 | 2.008904603 |
| d1991 | -2.87% | 0.0243692 | -1.18 | 0.239 | -0.0764464 | 0.019099 | 0.6689159 | 1.95211988 |
| d1992 | -4.23% | 0.0233847 | -1.81 | 0.071 | -0.0881094 | 0.0035763 | 0.6266493 | 1.871329798 |
| d1993 | -0.30% | 0.0219312 | -0.13 | 0.893 | -0.0459495 | 0.0400373 | 0.6236932 | 1.865806128 |
| d1994 | 2.51% | 0.0198859 | 1.26 | 0.207 | -0.0138912 | 0.0640763 | 0.6487857 | 1.913216199 |
| d1995 | 1.94% | 0.0195058 | 0.99 | 0.321 | -0.0188617 | 0.0576155 | 0.6681626 | 1.950649902 |
| d1996 | 2.58% | 0.0193577 | 1.33 | 0.183 | -0.0121793 | 0.0637174 | 0.6939317 | 2.001569655 |
| d1997 | 2.97% | 0.0187523 | 1.59 | 0.113 | -0.0070158 | 0.0665074 | 0.7236775 | 2.062002298 |
| d1998 | 0.85% | 0.0175198 | 0.48 | 0.63 | -0.0258939 | 0.0427968 | 0.732129 | 2.07950316 |
| d1999 | 5.15% | 0.0165131 | 3.12 | 0.002 | 0.0190994 | 0.0838432 | 0.7836003 | 2.189340375 |
| d2000 | 2.79% | 0.0158168 | 1.76 | 0.078 | -0.0031458 | 0.0588679 | 0.8114613 | 2.251195256 |
| d2001 | 8.26% | 0.0158493 | 5.21 | 0 | 0.0515591 | 0.1137002 | 0.8940909 | 2.445111928 |
| d2002 | 3.83% | 0.0231705 | 1.65 | 0.098 | -0.0071338 | 0.0837117 | 0.9323799 | 2.540548239 |

## SUMMARY OUTPUT - ALL LEE COUNTY

| Regression Statistics | |
|---|---|
| R Square | 0.2219 |
| Adjusted R Square | 0.2208 |
| Root MSE | 0.351 |
| Observations | 17159 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 602.0118 | 24.08047 | 195.46 | 0 |
| Residual | 17134 | 2110.8981 | 0.12320 | | |
| Total | 17159 | 2712.9099 | 0.15810 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 22.98% | 0.031312 | 7.34 | 0 | 0.1684683 | 0.2912178 | 0.229843 | 1.258402425 |
| d1979 | 9.14% | 0.0290845 | 3.14 | 0.002 | 0.0344044 | 0.1484216 | 0.321256 | 1.378858523 |
| d1980 | 8.97% | 0.0292551 | 3.06 | 0.002 | 0.0323131 | 0.1469989 | 0.410912 | 1.50819263 |
| d1981 | 8.51% | 0.0301711 | 2.82 | 0.005 | 0.0259732 | 0.14425 | 0.4960236 | 1.642178313 |
| d1982 | -2.44% | 0.0302735 | -0.81 | 0.42 | -0.0837467 | 0.0349315 | 0.471616 | 1.602581874 |
| d1983 | 3.31% | 0.0288451 | 1.15 | 0.252 | -0.0234817 | 0.0895971 | 0.5046737 | 1.656444934 |
| d1984 | -3.19% | 0.024872 | -1.28 | 0.199 | -0.0806785 | 0.016825 | 0.472747 | 1.60439542 |
| d1985 | 1.45% | 0.0220314 | 0.66 | 0.509 | -0.0286357 | 0.0577319 | 0.4872951 | 1.627906934 |
| d1986 | 3.76% | 0.0186848 | 2.01 | 0.044 | 0.0009896 | 0.0742381 | 0.524909 | 1.690305024 |
| d1987 | 3.47% | 0.0164471 | 2.11 | 0.035 | 0.0024734 | 0.0669495 | 0.5596205 | 1.750008246 |
| d1988 | 5.93% | 0.0143957 | 4.12 | 0 | 0.03105 | 0.0874842 | 0.6188876 | 1.85686132 |
| d1989 | 2.25% | 0.0134845 | 1.67 | 0.095 | -0.0039257 | 0.0489365 | 0.641393 | 1.899124518 |
| d1990 | 7.40% | 0.0131247 | 5.64 | 0 | 0.0483211 | 0.0997726 | 0.7154398 | 2.045085913 |
| d1991 | -1.00% | 0.0134577 | -0.74 | 0.459 | -0.0363348 | 0.016422 | 0.7054834 | 2.024825249 |
| d1992 | -2.32% | 0.0134527 | -1.72 | 0.085 | -0.0495221 | 0.0032151 | 0.6823299 | 1.978482032 |
| d1993 | -1.32% | 0.0129517 | -1.02 | 0.307 | -0.0386228 | 0.0121505 | 0.6690938 | 1.952467193 |
| d1994 | 2.37% | 0.0118574 | 2 | 0.046 | 0.0004529 | 0.0469363 | 0.6927884 | 1.999282568 |
| d1995 | 1.69% | 0.0114746 | 1.47 | 0.141 | -0.0055891 | 0.0393938 | 0.7096908 | 2.033362446 |
| d1996 | 0.82% | 0.0113709 | 0.72 | 0.47 | -0.0140756 | 0.0305005 | 0.7179033 | 2.050130193 |
| d1997 | 4.10% | 0.0108412 | 3.78 | 0 | 0.0197389 | 0.0622386 | 0.758892 | 2.135908323 |
| d1998 | 1.67% | 0.010124 | 1.65 | 0.099 | -0.0031276 | 0.0365606 | 0.7756085 | 2.171913334 |
| d1999 | 5.16% | 0.009527 | 5.41 | 0 | 0.0329098 | 0.0702575 | 0.8271922 | 2.286888591 |
| d2000 | 5.38% | 0.0091463 | 5.88 | 0 | 0.0358543 | 0.0717098 | 0.8809742 | 2.413249549 |
| d2001 | 9.11% | 0.009231 | 9.87 | 0 | 0.0730089 | 0.1091964 | 0.9720769 | 2.6434289 |
| d2002 | 5.50% | 0.0136738 | 4.02 | 0 | 0.0281951 | 0.0817991 | 1.027074 | 2.792881895 |

# Escambia County (Pensacola)

SUMMARY OUTPUT - WATERFRONT (0-250m)

| Regression Statistics | |
|---|---|
| R Square | 0.4556 |
| Adjusted R Square | 0.4410 |
| Root MSE | 0.3495 |
| Observations | 959 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 95.4752 | 3.8190 | 31.26 | 0 |
| Residual | 934 | 114.1045 | 0.1222 | | |
| Total | 959 | 209.5797 | 0.2185 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 27.11% | 0.1766687 | 1.53 | 0.125 | -0.0755842 | 0.6178431 | 0.2711294 | 1.31144476 |
| d1979 | 15.02% | 0.1810815 | 0.83 | 0.407 | -0.2051892 | 0.5055583 | 0.4213139 | 1.523962575 |
| d1980 | -1.20% | 0.0820838 | -0.15 | 0.883 | -0.1731348 | 0.1490454 | 0.4092692 | 1.505717005 |
| d1981 | 12.20% | 0.0966556 | 1.26 | 0.207 | -0.0676478 | 0.311727 | 0.5313088 | 1.701157327 |
| d1982 | -9.68% | 0.1048076 | -0.92 | 0.356 | -0.3024985 | 0.1088727 | 0.4344959 | 1.544184439 |
| d1983 | 17.40% | 0.095893 | 1.81 | 0.07 | -0.0142003 | 0.362181 | 0.6084863 | 1.837647645 |
| d1984 | 2.61% | 0.0785233 | 0.33 | 0.74 | -0.1280035 | 0.1802015 | 0.6345853 | 1.886239756 |
| d1985 | -1.59% | 0.0745849 | -0.21 | 0.832 | -0.1622352 | 0.1305117 | 0.6187236 | 1.85655682 |
| d1986 | 2.20% | 0.0704007 | 0.31 | 0.755 | -0.1161634 | 0.1601604 | 0.6407221 | 1.897850823 |
| d1987 | 12.60% | 0.0693794 | 1.82 | 0.07 | -0.0101444 | 0.2621709 | 0.7667353 | 2.152726762 |
| d1988 | -17.54% | 0.0679077 | -2.58 | 0.01 | -0.3086222 | -0.0420837 | 0.5913824 | 1.806483974 |
| d1989 | 3.82% | 0.0678661 | 0.56 | 0.573 | -0.0949679 | 0.1714075 | 0.6296022 | 1.876863814 |
| d1990 | 9.40% | 0.0668639 | 1.41 | 0.16 | -0.0372354 | 0.2252066 | 0.7235878 | 2.061817345 |
| d1991 | -10.49% | 0.058674 | -1.79 | 0.074 | -0.2200275 | 0.0102688 | 0.6187085 | 1.856528786 |
| d1992 | 7.82% | 0.0532679 | 1.47 | 0.142 | -0.0263214 | 0.1827557 | 0.6969257 | 2.007571334 |
| d1993 | 0.94% | 0.0482816 | 0.2 | 0.845 | -0.0853091 | 0.104197 | 0.7063696 | 2.026620444 |
| d1994 | 3.35% | 0.0456054 | 0.74 | 0.462 | -0.0559677 | 0.1230342 | 0.7399029 | 2.095732009 |
| d1995 | 9.37% | 0.0474331 | 1.98 | 0.048 | 0.0006496 | 0.1868252 | 0.8336403 | 2.301682322 |
| d1996 | 7.62% | 0.0469559 | 1.62 | 0.105 | -0.0159381 | 0.1683643 | 0.9098534 | 2.483958358 |
| d1997 | 4.67% | 0.0444567 | 1.05 | 0.294 | -0.0405544 | 0.1339386 | 0.9565455 | 2.602689933 |
| d1998 | -1.34% | 0.0481449 | -0.28 | 0.78 | -0.1079339 | 0.0810355 | 0.9430963 | 2.567920173 |
| d1999 | 15.07% | 0.045011 | 3.35 | 0.001 | 0.0623865 | 0.2390552 | 1.0938171 | 2.98564887 |
| d2000 | -4.06% | 0.0448636 | -0.91 | 0.366 | -0.1286585 | 0.0474318 | 1.0532038 | 2.866821142 |
| d2001 | 12.11% | 0.0452506 | 2.68 | 0.008 | 0.0323419 | 0.2099513 | 1.1743504 | 3.236040129 |
| d2002 | 7.59% | 0.0825798 | 0.92 | 0.358 | -0.0861722 | 0.2379548 | 1.2502417 | 3.491186675 |

SUMMARY OUTPUT - WATER ACCESS (251-500m)

| *Regression Statistics* | |
|---|---|
| R Square | 0.3347 |
| Adjusted R Square | 0.3206 |
| Root MSE | 0.3986 |
| Observations | 1206 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Prob > F* |
|---|---|---|---|---|---|
| Regression | 25 | 94.4203 | 3.7768 | 23.77 | 0 |
| Residual | 1181 | 187.6704 | 0.1589 | | |
| Total | 1206 | 282.0907 | 0.2339 | | |

| *Dummy* | *Coefficients* | *Standard Error* | *t Stat* | *P>\|t\|* | *Lower 95%* | *Upper 95%* | *Accumulated Appreciation* | *INDEX LEVEL* |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 14.43% | 0.1131905 | 1.27 | 0.203 | -0.0777653 | 0.3663886 | 0.1443116 | 1.155244026 |
| d1979 | 16.95% | 0.1299666 | 1.3 | 0.192 | -0.0855091 | 0.4244732 | 0.3137936 | 1.368607227 |
| d1980 | 6.72% | 0.0927868 | 0.72 | 0.469 | -0.1148142 | 0.2492767 | 0.3810248 | 1.463783907 |
| d1981 | 9.23% | 0.0949302 | 0.97 | 0.331 | -0.09391 | 0.2785914 | 0.4733655 | 1.605388045 |
| d1982 | 1.67% | 0.095406 | 0.17 | 0.861 | -0.1705 | 0.2038684 | 0.4900497 | 1.632397348 |
| d1983 | -0.18% | 0.0865375 | -0.02 | 0.984 | -0.1715399 | 0.168029 | 0.4882943 | 1.629534351 |
| d1984 | 6.33% | 0.0763235 | 0.83 | 0.407 | -0.0864006 | 0.2130887 | 0.5516384 | 1.736095107 |
| d1985 | 5.63% | 0.0703936 | 0.8 | 0.424 | -0.081845 | 0.194376 | 0.6079039 | 1.836577711 |
| d1986 | -8.00% | 0.0687651 | -1.16 | 0.245 | -0.2148804 | 0.0549505 | 0.527939 | 1.695434415 |
| d1987 | 4.83% | 0.0649096 | 0.74 | 0.457 | -0.0790299 | 0.1756719 | 0.57626 | 1.779371123 |
| d1988 | 8.60% | 0.0691206 | 1.24 | 0.214 | -0.049641 | 0.2215849 | 0.6622319 | 1.93911542 |
| d1989 | -11.00% | 0.067848 | -1.62 | 0.105 | -0.2430914 | 0.0231407 | 0.5522565 | 1.737168519 |
| d1990 | -0.80% | 0.0631057 | -0.13 | 0.9 | -0.1317651 | 0.1158585 | 0.5443032 | 1.723407094 |
| d1991 | 8.43% | 0.0612214 | 1.38 | 0.169 | -0.035793 | 0.2044367 | 0.628625 | 1.875030639 |
| d1992 | -6.64% | 0.0554537 | -1.2 | 0.231 | -0.1752139 | 0.0423835 | 0.5622098 | 1.754545414 |
| d1993 | 13.33% | 0.0523634 | 2.55 | 0.011 | 0.0305671 | 0.2360384 | 0.6955126 | 2.004736439 |
| d1994 | -4.22% | 0.0511929 | -0.82 | 0.41 | -0.1426441 | 0.0582343 | 0.6533077 | 1.921887354 |
| d1995 | 4.38% | 0.0513381 | 0.85 | 0.393 | -0.056893 | 0.1445553 | 0.6971388 | 2.007999193 |
| d1996 | 7.79% | 0.0482386 | 1.62 | 0.107 | -0.016732 | 0.172554 | 0.7750498 | 2.170700225 |
| d1997 | 1.79% | 0.0497253 | 0.36 | 0.72 | -0.0797074 | 0.1154121 | 0.7929022 | 2.209800412 |
| d1998 | 7.57% | 0.0511262 | 1.48 | 0.139 | -0.0245826 | 0.176034 | 0.8686279 | 2.383638019 |
| d1999 | 9.69% | 0.0468157 | 2.07 | 0.039 | 0.0050049 | 0.1887073 | 0.965484 | 2.626058361 |
| d2000 | 1.85% | 0.0468986 | 0.39 | 0.693 | -0.0735047 | 0.110523 | 0.9839932 | 2.67511722 |
| d2001 | 1.31% | 0.0455899 | 0.29 | 0.775 | -0.0763895 | 0.1025028 | 0.9970498 | 2.710274171 |
| d2002 | 3.01% | 0.0782972 | 0.38 | 0.701 | -0.1235342 | 0.1837 | 1.0271327 | 2.793045842 |

SUMMARY OUTPUT - TRANSITION (501-2500m)

| *Regression Statistics* | |
|---|---|
| R Square | 0.3152 |
| Adjusted R Square | 0.3124 |
| Root MSE | 0.4026 |
| Observations | 6294 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Prob > F* |
|---|---|---|---|---|---|
| Regression | 25 | 467.6248 | 18.7499 | 115.41 | 0 |
| Residual | 6269 | 1016.0539 | 0.1628 | | |
| Total | 6294 | 1483.6787 | 0.2357 | | |

| *Dummy* | *Coefficients* | *Standard Error* | *t Stat* | *P>\|t\|* | *Lower 95%* | *Upper 95%* | *Accumulated Appreciation* | *INDEX LEVEL* |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 24.10% | 0.0416687 | 5.78 | 0 | 0.1593556 | 0.3227254 | 0.2410405 | 1.272572573 |
| d1979 | 9.48% | 0.0453819 | 2.09 | 0.037 | 0.00586 | 0.1837881 | 0.3358646 | 1.399149567 |
| d1980 | 8.34% | 0.0368147 | 2.26 | 0.024 | 0.0111835 | 0.1555225 | 0.4192176 | 1.520771239 |
| d1981 | 10.07% | 0.038065 | 2.65 | 0.008 | 0.0260821 | 0.1753229 | 0.5199201 | 1.681893261 |
| d1982 | 0.75% | 0.0411416 | 0.18 | 0.855 | -0.073118 | 0.0881852 | 0.5274537 | 1.69461182 |
| d1983 | 2.41% | 0.0391226 | 0.62 | 0.537 | -0.052559 | 0.1008282 | 0.5515883 | 1.736008131 |
| d1984 | 4.06% | 0.0351401 | 1.16 | 0.248 | -0.0282487 | 0.1095246 | 0.5922262 | 1.808008928 |
| d1985 | 1.64% | 0.0332118 | 0.49 | 0.621 | -0.0487067 | 0.0815064 | 0.608626 | 1.837904382 |
| d1986 | 1.36% | 0.0316313 | 0.43 | 0.668 | -0.0484385 | 0.0755779 | 0.6221957 | 1.863014174 |
| d1987 | -2.23% | 0.0295227 | -0.76 | 0.449 | -0.0802239 | 0.0355254 | 0.5998464 | 1.821838944 |
| d1988 | 4.89% | 0.0287206 | 1.7 | 0.088 | -0.0073715 | 0.1052327 | 0.648777 | 1.913199555 |
| d1989 | 0.28% | 0.0297136 | 0.09 | 0.926 | -0.0554742 | 0.0610233 | 0.6515516 | 1.918515289 |
| d1990 | -3.15% | 0.0294982 | -1.07 | 0.286 | -0.0892824 | 0.0263707 | 0.6200958 | 1.859106136 |
| d1991 | -4.81% | 0.0286055 | -1.68 | 0.093 | -0.1041904 | 0.0079628 | 0.571982 | 1.771775232 |
| d1992 | 4.41% | 0.0259365 | 1.7 | 0.089 | -0.0067666 | 0.0949221 | 0.6160597 | 1.85161772 |
| d1993 | 3.86% | 0.0234174 | 1.65 | 0.1 | -0.0073468 | 0.0844653 | 0.654619 | 1.924409178 |
| d1994 | 4.32% | 0.0230379 | 1.87 | 0.061 | -0.0019854 | 0.0883388 | 0.6977957 | 2.009318681 |
| d1995 | 3.35% | 0.0227761 | 1.47 | 0.141 | -0.0111321 | 0.0781659 | 0.7313126 | 2.077806147 |
| d1996 | 4.03% | 0.0216067 | 1.86 | 0.062 | -0.0020806 | 0.0826326 | 0.7715886 | 2.163199985 |
| d1997 | 6.86% | 0.0209819 | 3.27 | 0.001 | 0.0274553 | 0.1097187 | 0.8401756 | 2.316773767 |
| d1998 | 5.51% | 0.0211164 | 2.61 | 0.009 | 0.0137515 | 0.0965423 | 0.8953225 | 2.448125183 |
| d1999 | -0.49% | 0.0206675 | -0.24 | 0.812 | -0.0454383 | 0.0355926 | 0.8903996 | 2.436102924 |
| d2000 | 7.46% | 0.0210737 | 3.54 | 0 | 0.0332486 | 0.1158721 | 0.96496 | 2.624682667 |
| d2001 | 1.24% | 0.021753 | 0.57 | 0.569 | -0.030266 | 0.0550205 | 0.9773372 | 2.657370766 |
| d2002 | -3.11% | 0.0376025 | -0.83 | 0.408 | -0.1048392 | 0.0425884 | 0.9462118 | 2.575933004 |

SUMMARY OUTPUT - INLAND (2500-MAX)

| Regression Statistics | |
|---|---|
| R Square | 0.3057 |
| Adjusted R Square | 0.3034 |
| Root MSE | 0.4288 |
| Observations | 7660 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 617.9689 | 24.7187 | 134.47 | 0 |
| Residual | 7635 | 1403.5292 | 0.1838 | | |
| Total | 7660 | 2021.4981 | 0.2639 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 18.36% | 0.0483456 | 3.8 | 0 | 0.0888752 | 0.2784166 | 0.1836459 | 1.201590265 |
| d1979 | 16.54% | 0.050727 | 3.26 | 0.001 | 0.0659143 | 0.2647918 | 0.348999 | 1.417647773 |
| d1980 | 8.28% | 0.0360282 | 2.3 | 0.022 | 0.0122127 | 0.1534632 | 0.4318369 | 1.540083907 |
| d1981 | 9.90% | 0.0382583 | 2.59 | 0.01 | 0.0240244 | 0.1740179 | 0.5308581 | 1.700390788 |
| d1982 | -0.67% | 0.0391356 | -0.17 | 0.864 | -0.0833961 | 0.0700371 | 0.5241786 | 1.689070876 |
| d1983 | 3.54% | 0.0370094 | 0.96 | 0.339 | -0.0371344 | 0.1079626 | 0.5595927 | 1.749959597 |
| d1984 | 5.29% | 0.0333785 | 1.59 | 0.113 | -0.0124891 | 0.118373 | 0.6125346 | 1.845102073 |
| d1985 | 4.51% | 0.0322819 | 1.4 | 0.162 | -0.0181459 | 0.108417 | 0.6576702 | 1.930289902 |
| d1986 | 2.35% | 0.0312771 | 0.75 | 0.453 | -0.0378461 | 0.0847773 | 0.6811358 | 1.976120936 |
| d1987 | -4.87% | 0.029526 | -1.65 | 0.099 | -0.1065865 | 0.0091716 | 0.6324283 | 1.882175521 |
| d1988 | 5.03% | 0.0292652 | 1.72 | 0.086 | -0.0070432 | 0.1076924 | 0.6827529 | 1.979319107 |
| d1989 | -0.77% | 0.0283765 | -0.27 | 0.787 | -0.0633103 | 0.047941 | 0.6750682 | 1.964166928 |
| d1990 | 2.40% | 0.0270854 | 0.89 | 0.375 | -0.0290653 | 0.0771245 | 0.6990978 | 2.011936719 |
| d1991 | -3.28% | 0.0270592 | -1.21 | 0.225 | -0.0858915 | 0.0201953 | 0.6662497 | 1.94692207 |
| d1992 | -0.44% | 0.0248508 | -0.18 | 0.858 | -0.0531635 | 0.0442652 | 0.6618006 | 1.93827926 |
| d1993 | 0.72% | 0.0225169 | 0.32 | 0.748 | -0.0368966 | 0.0513822 | 0.6690434 | 1.952368791 |
| d1994 | 5.16% | 0.0215225 | 2.4 | 0.017 | 0.0093652 | 0.0937451 | 0.7205986 | 2.055663363 |
| d1995 | 2.72% | 0.0211706 | 1.28 | 0.199 | -0.0143196 | 0.0686807 | 0.7477791 | 2.112303588 |
| d1996 | 4.33% | 0.0202987 | 2.14 | 0.033 | 0.0035577 | 0.0831397 | 0.7911278 | 2.205882819 |
| d1997 | 7.74% | 0.0199574 | 3.88 | 0 | 0.0382391 | 0.1164829 | 0.8684888 | 2.383306478 |
| d1998 | 3.91% | 0.0209416 | 1.87 | 0.062 | -0.0019922 | 0.0801102 | 0.9075478 | 2.478237941 |
| d1999 | 5.17% | 0.0200616 | 2.58 | 0.01 | 0.0123685 | 0.091021 | 0.9592425 | 2.609718862 |
| d2000 | 0.24% | 0.0202975 | 0.12 | 0.905 | -0.0373613 | 0.0422161 | 0.9616699 | 2.616061389 |
| d2001 | 4.60% | 0.0212789 | 2.16 | 0.031 | 0.0042623 | 0.0876872 | 1.0076446 | 2.739141637 |
| d2002 | -9.69% | 0.0359609 | -2.69 | 0.007 | -0.1673446 | -0.0263582 | 0.9107932 | 2.48629388 |

SUMMARY OUTPUT - ALL ESCAMBIA COUNTY

| Regression Statistics | |
|---|---|
| R Square | 0.3151 |
| Adjusted R Square | 0.314 |
| Root MSE | 0.412 |
| Observations | 16119 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 1259.3496 | 50.3740 | 296.15 | 0 |
| Residual | 16094 | 2737.4977 | 0.17943 | | |
| Total | 16119 | 3996.8473 | 0.24796 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 21.18% | 0.029976 | 7.06 | 0 | 0.1529953 | 0.2705079 | 0.2117516 | 1.235840864 |
| d1979 | 13.23% | 0.0320428 | 4.13 | 0 | 0.069494 | 0.195109 | 0.3440531 | 1.410653539 |
| d1980 | 7.58% | 0.0238444 | 3.18 | 0.001 | 0.0290582 | 0.1225337 | 0.419849 | 1.521731757 |
| d1981 | 10.37% | 0.0251275 | 4.13 | 0 | 0.0544428 | 0.152948 | 0.5235444 | 1.688000006 |
| d1982 | -0.34% | 0.0263364 | -0.13 | 0.897 | -0.0550293 | 0.0482152 | 0.5201373 | 1.682258608 |
| d1983 | 3.32% | 0.0248417 | 1.34 | 0.181 | -0.0154552 | 0.0819297 | 0.5533745 | 1.73911176 |
| d1984 | 4.80% | 0.0222202 | 2.16 | 0.031 | 0.0044359 | 0.091544 | 0.6013644 | 1.824606596 |
| d1985 | 3.07% | 0.0211777 | 1.45 | 0.147 | -0.0108349 | 0.0721863 | 0.6320401 | 1.881445003 |
| d1986 | 1.12% | 0.0203753 | 0.55 | 0.583 | -0.0287565 | 0.0511192 | 0.6432214 | 1.902600054 |
| d1987 | -2.03% | 0.0191881 | -1.06 | 0.291 | -0.0578834 | 0.0173383 | 0.6229489 | 1.864417925 |
| d1988 | 3.76% | 0.0189603 | 1.98 | 0.048 | 0.0003947 | 0.0747232 | 0.6605078 | 1.935775071 |
| d1989 | -0.58% | 0.0189015 | -0.3 | 0.761 | -0.0428042 | 0.0312939 | 0.6547527 | 1.924666488 |
| d1990 | 0.27% | 0.0183281 | 0.15 | 0.881 | -0.0331793 | 0.038671 | 0.6574986 | 1.929958693 |
| d1991 | -3.36% | 0.0179438 | -1.87 | 0.061 | -0.0688066 | 0.0015371 | 0.6238639 | 1.866124648 |
| d1992 | 1.41% | 0.0163713 | 0.86 | 0.388 | -0.0179566 | 0.0462224 | 0.6379968 | 1.892685651 |
| d1993 | 3.02% | 0.014854 | 2.03 | 0.042 | 0.0010718 | 0.0593028 | 0.6681841 | 1.950691841 |
| d1994 | 3.91% | 0.0143589 | 2.72 | 0.006 | 0.0109722 | 0.0672622 | 0.7073013 | 2.028509527 |
| d1995 | 3.51% | 0.0142282 | 2.46 | 0.014 | 0.0071658 | 0.0629433 | 0.7423559 | 2.10087915 |
| d1996 | 4.68% | 0.0136018 | 3.44 | 0.001 | 0.0201524 | 0.0734744 | 0.7891693 | 2.201566825 |
| d1997 | 6.74% | 0.0133243 | 5.06 | 0 | 0.0412975 | 0.0935317 | 0.8565839 | 2.355101674 |
| d1998 | 4.48% | 0.0137571 | 3.26 | 0.001 | 0.0178559 | 0.0717869 | 0.9014053 | 2.463062021 |
| d1999 | 4.00% | 0.0132205 | 3.03 | 0.002 | 0.0140892 | 0.0659164 | 0.9414081 | 2.563588667 |
| d2000 | 2.96% | 0.0133935 | 2.21 | 0.027 | 0.0033121 | 0.0558177 | 0.970973 | 2.640512428 |
| d2001 | 3.52% | 0.0138479 | 2.54 | 0.011 | 0.0080445 | 0.0623312 | 1.0061608 | 2.735080312 |
| d2002 | -5.16% | 0.023757 | -2.17 | 0.03 | -0.0981936 | -0.0050608 | 0.9545336 | 2.597458846 |

# Volusia County (Daytona)

SUMMARY OUTPUT - WATERFRONT (0-250m)

| Regression Statistics | |
|---|---|
| R Square | 0.5954 |
| Adjusted R Square | 0.5907 |
| Root MSE | 0.23709 |
| Observations | 2168 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 177.2521 | 7.09837 | 126.13 | 0 |
| Residual | 2143 | 120.4610 | 0.056211 | | |
| Total | 2168 | 297.7131 | 0.137321 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 21.93% | 0.0286863 | 7.65 | 0 | 0.1630585 | 0.2755702 | 0.2193144 | 1.245222713 |
| d1979 | 10.86% | 0.0331543 | 3.27 | 0.001 | 0.0435522 | 0.1735879 | 0.3278844 | 1.388028507 |
| d1980 | 10.74% | 0.0339598 | 3.16 | 0.002 | 0.0408137 | 0.1740087 | 0.4352956 | 1.545419818 |
| d1981 | 5.84% | 0.0378404 | 1.54 | 0.123 | -0.0157906 | 0.1326249 | 0.4937127 | 1.638387784 |
| d1982 | -1.34% | 0.0410646 | -0.33 | 0.745 | -0.0938867 | 0.0671746 | 0.4803567 | 1.616650959 |
| d1983 | 2.70% | 0.0408495 | 0.66 | 0.509 | -0.0531159 | 0.1071015 | 0.5073495 | 1.660883185 |
| d1984 | 4.99% | 0.0362731 | 1.38 | 0.169 | -0.0211962 | 0.1210723 | 0.5572876 | 1.74593041 |
| d1985 | 1.17% | 0.0324613 | 0.36 | 0.719 | -0.051987 | 0.0753307 | 0.5689594 | 1.76642795 |
| d1986 | 3.12% | 0.0310255 | 1.01 | 0.314 | -0.0296032 | 0.0920831 | 0.6001994 | 1.822482167 |
| d1987 | 4.45% | 0.0278394 | 1.6 | 0.11 | -0.0100662 | 0.0991239 | 0.6447282 | 1.905469052 |
| d1988 | 0.46% | 0.0256862 | 0.18 | 0.856 | -0.0457232 | 0.0550216 | 0.6493774 | 1.914348584 |
| d1989 | 4.91% | 0.024051 | 2.04 | 0.041 | 0.0019434 | 0.0962747 | 0.6984864 | 2.010706997 |
| d1990 | 4.24% | 0.0247972 | 1.71 | 0.087 | -0.0062067 | 0.0910515 | 0.7409088 | 2.097841166 |
| d1991 | -0.58% | 0.026121 | -0.22 | 0.823 | -0.057073 | 0.0453774 | 0.735061 | 2.085609211 |
| d1992 | 0.63% | 0.0253231 | 0.25 | 0.803 | -0.0433531 | 0.0559677 | 0.7413683 | 2.098805346 |
| d1993 | 0.27% | 0.0247536 | 0.11 | 0.913 | -0.0458345 | 0.0512526 | 0.7440773 | 2.104498718 |
| d1994 | -0.53% | 0.0245937 | -0.22 | 0.83 | -0.0535206 | 0.0429392 | 0.7387866 | 2.093393849 |
| d1995 | 3.35% | 0.023808 | 1.41 | 0.16 | -0.0132069 | 0.0801713 | 0.7722688 | 2.164671894 |
| d1996 | 0.38% | 0.0235818 | 0.16 | 0.873 | -0.0424828 | 0.0500082 | 0.7760315 | 2.172832248 |
| d1997 | 4.39% | 0.0225509 | 1.94 | 0.052 | -0.0003709 | 0.0880771 | 0.8198846 | 2.270237837 |
| d1998 | 4.99% | 0.0199328 | 2.5 | 0.012 | 0.010769 | 0.0889485 | 0.8697434 | 2.386298451 |
| d1999 | 2.11% | 0.0196796 | 1.07 | 0.285 | -0.0175297 | 0.0596565 | 0.8908068 | 2.437095107 |
| d2000 | 9.16% | 0.0200095 | 4.58 | 0 | 0.0523742 | 0.1308542 | 0.982421 | 2.670914705 |
| d2001 | 13.11% | 0.0215236 | 6.09 | 0 | 0.0888779 | 0.1732965 | 1.1135082 | 3.045022225 |
| d2002 | 10.21% | 0.0320746 | 3.18 | 0.001 | 0.0392463 | 0.1650475 | 1.2156551 | 3.372502667 |

SUMMARY OUTPUT - WATER ACCESS (251-500m)

| Regression Statistics | |
|---|---|
| R Square | 0.6915 |
| Adjusted R Square | 0.6883 |
| Root MSE | 0.21802 |
| Observations | 2456 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 258.9767 | 10.35906 | 217.93 | 0 |
| Residual | 2431 | 115.5545 | 0.04753 | | |
| Total | 2456 | 374.5312 | 0.15250 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 22.21% | 0.0242307 | 9.17 | 0 | 0.17463 | 0.2696599 | 0.2221449 | 1.248752309 |
| d1979 | 13.08% | 0.0270328 | 4.84 | 0 | 0.0777865 | 0.1838058 | 0.3529411 | 1.423247312 |
| d1980 | 12.95% | 0.0268083 | 4.83 | 0 | 0.0769021 | 0.1820409 | 0.4824126 | 1.61997805 |
| d1981 | 7.29% | 0.0301206 | 2.42 | 0.016 | 0.0138202 | 0.1319495 | 0.5552974 | 1.742459115 |
| d1982 | -0.40% | 0.0331835 | -0.12 | 0.904 | -0.0690897 | 0.0610518 | 0.5512785 | 1.735470399 |
| d1983 | 2.28% | 0.0318033 | 0.72 | 0.473 | -0.0395547 | 0.0851741 | 0.5740882 | 1.775510878 |
| d1984 | -0.79% | 0.0300472 | -0.26 | 0.791 | -0.0668699 | 0.0509718 | 0.5661392 | 1.761453288 |
| d1985 | 0.22% | 0.0282501 | 0.08 | 0.938 | -0.053215 | 0.0575786 | 0.568321 | 1.765300622 |
| d1986 | 6.15% | 0.0247749 | 2.48 | 0.013 | 0.0129303 | 0.1100945 | 0.6298334 | 1.877297795 |
| d1987 | 1.36% | 0.0239727 | 0.57 | 0.571 | -0.0334374 | 0.0605806 | 0.643405 | 1.902949403 |
| d1988 | 4.16% | 0.0234627 | 1.77 | 0.077 | -0.004456 | 0.087562 | 0.684958 | 1.983688519 |
| d1989 | 4.75% | 0.0223745 | 2.12 | 0.034 | 0.0036407 | 0.0913908 | 0.7324738 | 2.080220297 |
| d1990 | 2.14% | 0.0220341 | 0.97 | 0.332 | -0.0218248 | 0.0645903 | 0.7538566 | 2.125180203 |
| d1991 | -0.55% | 0.0228364 | -0.24 | 0.81 | -0.0502615 | 0.0393004 | 0.748376 | 2.113564799 |
| d1992 | 0.48% | 0.0234564 | 0.21 | 0.837 | -0.0411567 | 0.0508366 | 0.7532159 | 2.123819036 |
| d1993 | 1.65% | 0.0229574 | 0.72 | 0.471 | -0.0284787 | 0.0615575 | 0.7697553 | 2.159237824 |
| d1994 | 5.23% | 0.0217765 | 2.4 | 0.016 | 0.0096394 | 0.0950443 | 0.8220972 | 2.275266526 |
| d1995 | -2.61% | 0.020411 | -1.28 | 0.202 | -0.0660853 | 0.0139644 | 0.7960367 | 2.216737898 |
| d1996 | 1.83% | 0.0200048 | 0.91 | 0.361 | -0.0209641 | 0.0574924 | 0.8143008 | 2.257596609 |
| d1997 | 3.32% | 0.0205896 | 1.61 | 0.107 | -0.0072075 | 0.0735424 | 0.8474682 | 2.333730826 |
| d1998 | 0.48% | 0.019019 | 0.25 | 0.8 | -0.0324852 | 0.042105 | 0.8522781 | 2.344982877 |
| d1999 | 7.04% | 0.0170935 | 4.12 | 0 | 0.0369008 | 0.1039393 | 0.9226982 | 2.5160701 |
| d2000 | 6.81% | 0.0171114 | 3.98 | 0 | 0.0345116 | 0.1016204 | 0.9907642 | 2.6932919 |
| d2001 | 15.22% | 0.0184228 | 8.26 | 0 | 0.1160449 | 0.188297 | 1.1429352 | 3.135959538 |
| d2002 | 0.02% | 0.0314369 | 0.01 | 0.995 | -0.0614434 | 0.0618485 | 1.1431378 | 3.136594948 |

SUMMARY OUTPUT - TRANSITION (501-2500m)

| Regression Statistics | |
|---|---|
| R Square | 0.579 |
| Adjusted R Square | 0.5771 |
| Root MSE | 0.24803 |
| Observations | 5677 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 478.1761 | 19.12704 | 310.97 | 0 |
| Residual | 5652 | 347.7081 | 0.06152 | | |
| Total | 5677 | 825.8842 | 0.14548 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 18.44% | 0.0173628 | 10.62 | 0 | 0.1503837 | 0.218459 | 0.1844214 | 1.202522459 |
| d1979 | 13.66% | 0.0201023 | 6.8 | 0 | 0.0972283 | 0.1760447 | 0.3210579 | 1.378585399 |
| d1980 | 10.11% | 0.0208015 | 4.86 | 0 | 0.0603665 | 0.1419244 | 0.4222034 | 1.525318743 |
| d1981 | 8.76% | 0.0227183 | 3.86 | 0 | 0.0430438 | 0.1321169 | 0.5097838 | 1.664931198 |
| d1982 | -4.10% | 0.0264204 | -1.55 | 0.12 | -0.0928233 | 0.010765 | 0.4687546 | 1.598002801 |
| d1983 | 6.12% | 0.026907 | 2.27 | 0.023 | 0.0084352 | 0.1139313 | 0.5299378 | 1.698826638 |
| d1984 | 2.61% | 0.0227622 | 1.15 | 0.252 | -0.0185223 | 0.070723 | 0.5560381 | 1.743750233 |
| d1985 | 0.85% | 0.0209304 | 0.4 | 0.686 | -0.0325749 | 0.0494881 | 0.5644947 | 1.758558958 |
| d1986 | 5.30% | 0.0191507 | 2.77 | 0.006 | 0.0154934 | 0.0905789 | 0.6175308 | 1.854343639 |
| d1987 | 2.97% | 0.0171633 | 1.73 | 0.083 | -0.0039219 | 0.0633716 | 0.6472557 | 1.910291217 |
| d1988 | 2.05% | 0.0168566 | 1.22 | 0.224 | -0.0125473 | 0.0535434 | 0.6677538 | 1.949852639 |
| d1989 | 1.08% | 0.017166 | 0.63 | 0.529 | -0.0228481 | 0.0444557 | 0.6785576 | 1.971032663 |
| d1990 | 2.42% | 0.016869 | 1.43 | 0.152 | -0.0088828 | 0.0572564 | 0.7027444 | 2.019286841 |
| d1991 | -0.71% | 0.0168351 | -0.42 | 0.673 | -0.0401169 | 0.0258898 | 0.6956308 | 2.004973412 |
| d1992 | 2.10% | 0.0167919 | 1.25 | 0.211 | -0.0119037 | 0.0539333 | 0.7166456 | 2.047553365 |
| d1993 | 2.04% | 0.0158141 | 1.29 | 0.197 | -0.0105885 | 0.0514149 | 0.7370588 | 2.089780006 |
| d1994 | 1.17% | 0.0150067 | 0.78 | 0.436 | -0.0177373 | 0.0411004 | 0.7487403 | 2.114334911 |
| d1995 | -0.62% | 0.0153973 | -0.4 | 0.687 | -0.0363801 | 0.023989 | 0.7425448 | 2.101276044 |
| d1996 | 5.52% | 0.0154514 | 3.57 | 0 | 0.0249346 | 0.085516 | 0.7977701 | 2.220583724 |
| d1997 | 0.76% | 0.0150386 | 0.51 | 0.613 | -0.021866 | 0.0370969 | 0.8053855 | 2.237558912 |
| d1998 | 3.14% | 0.0141218 | 2.22 | 0.026 | 0.0037081 | 0.0590764 | 0.8367778 | 2.308915191 |
| d1999 | 3.90% | 0.0132291 | 2.95 | 0.003 | 0.0130651 | 0.0649334 | 0.8757771 | 2.400740184 |
| d2000 | 8.04% | 0.0137014 | 5.87 | 0 | 0.0535151 | 0.107235 | 0.9561522 | 2.601666497 |
| d2001 | 8.11% | 0.0140889 | 5.76 | 0 | 0.0534957 | 0.1087348 | 1.0372674 | 2.821496449 |
| d2002 | 5.46% | 0.0226694 | 2.41 | 0.016 | 0.0102023 | 0.0990838 | 1.0919104 | 2.979961557 |

SUMMARY OUTPUT - INLAND (2500-MAX)

| Regression Statistics | |
|---|---|
| R Square | 0.5147 |
| Adjusted R Square | 0.5138 |
| Root MSE | 0.26922 |
| Observations | 12934 |

ANOVA

| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 992.2953 | 39.69180 | 547.64 | 0 |
| Residual | 12909 | 935.6183 | 0.07248 | | |
| Total | 12934 | 1927.913598 | 0.14958 | | |

| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 18.71% | 0.0150211 | 12.46 | 0 | 0.1577005 | 0.2165876 | 0.187144 | 1.205800908 |
| d1979 | 13.21% | 0.0179905 | 7.34 | 0 | 0.096795 | 0.1673231 | 0.319203 | 1.376030631 |
| d1980 | 10.66% | 0.0175455 | 6.07 | 0 | 0.0721776 | 0.1409612 | 0.4257724 | 1.530772332 |
| d1981 | 5.98% | 0.0188453 | 3.18 | 0.001 | 0.0229038 | 0.0967829 | 0.4856158 | 1.625175484 |
| d1982 | -0.04% | 0.0202333 | -0.02 | 0.984 | -0.040062 | 0.0392585 | 0.485214 | 1.624522619 |
| d1983 | 3.92% | 0.0188787 | 2.07 | 0.038 | 0.0021587 | 0.0761689 | 0.5243778 | 1.689407372 |
| d1984 | 6.31% | 0.0159948 | 3.95 | 0 | 0.0317598 | 0.0944643 | 0.5874898 | 1.799465722 |
| d1985 | 2.62% | 0.0149233 | 1.75 | 0.079 | -0.0030785 | 0.0554252 | 0.6136631 | 1.847185446 |
| d1986 | 2.95% | 0.0141788 | 2.08 | 0.038 | 0.0016847 | 0.0572698 | 0.6431403 | 1.902445759 |
| d1987 | 2.31% | 0.0129765 | 1.78 | 0.075 | -0.0023238 | 0.0485481 | 0.6662525 | 1.946927522 |
| d1988 | 0.63% | 0.0123379 | 0.51 | 0.609 | -0.0178777 | 0.0304904 | 0.6725589 | 1.959244422 |
| d1989 | 4.87% | 0.0123179 | 3.95 | 0 | 0.0245485 | 0.0728384 | 0.7212524 | 2.057007795 |
| d1990 | 0.31% | 0.0120371 | 0.26 | 0.796 | -0.0204827 | 0.0267063 | 0.7243642 | 2.063418761 |
| d1991 | -0.62% | 0.0123171 | -0.5 | 0.615 | -0.0303451 | 0.0179416 | 0.7181624 | 2.050661451 |
| d1992 | -0.15% | 0.0124035 | -0.12 | 0.905 | -0.0257889 | 0.0228366 | 0.7166863 | 2.047636702 |
| d1993 | 2.57% | 0.0114431 | 2.24 | 0.025 | 0.00323 | 0.0480903 | 0.7423464 | 2.100859192 |
| d1994 | 2.07% | 0.0106303 | 1.95 | 0.051 | -0.0000874 | 0.0415864 | 0.7630959 | 2.144906368 |
| d1995 | 3.42% | 0.0106507 | 3.21 | 0.001 | 0.0133107 | 0.0550646 | 0.7972835 | 2.219503451 |
| d1996 | 0.58% | 0.0105864 | 0.55 | 0.585 | -0.0149658 | 0.0265359 | 0.8030686 | 2.232380712 |
| d1997 | 1.44% | 0.0103378 | 1.39 | 0.164 | -0.0058689 | 0.0346581 | 0.8174632 | 2.264747333 |
| d1998 | 4.82% | 0.0099176 | 4.86 | 0 | 0.0287239 | 0.0676039 | 0.8656271 | 2.376495919 |
| d1999 | 3.64% | 0.0091791 | 3.96 | 0 | 0.0183746 | 0.0543592 | 0.901994 | 2.464512453 |
| d2000 | 7.66% | 0.0089308 | 8.57 | 0 | 0.0590567 | 0.0940681 | 0.9785564 | 2.660612608 |
| d2001 | 8.20% | 0.0094358 | 8.69 | 0 | 0.0635202 | 0.1005115 | 1.0605722 | 2.888023043 |
| d2002 | 1.86% | 0.0150074 | 1.24 | 0.215 | -0.0107999 | 0.0480336 | 1.079189 | 2.942292384 |

SUMMARY OUTPUT - ALL VOLUSIA COUNTY

| Regression Statistics | |
|---|---|
| R Square | 0.5543 |
| Adjusted R Square | 0.5538 |
| Root MSE | 0.25651 |
| Observations | 23235 |

ANOVA

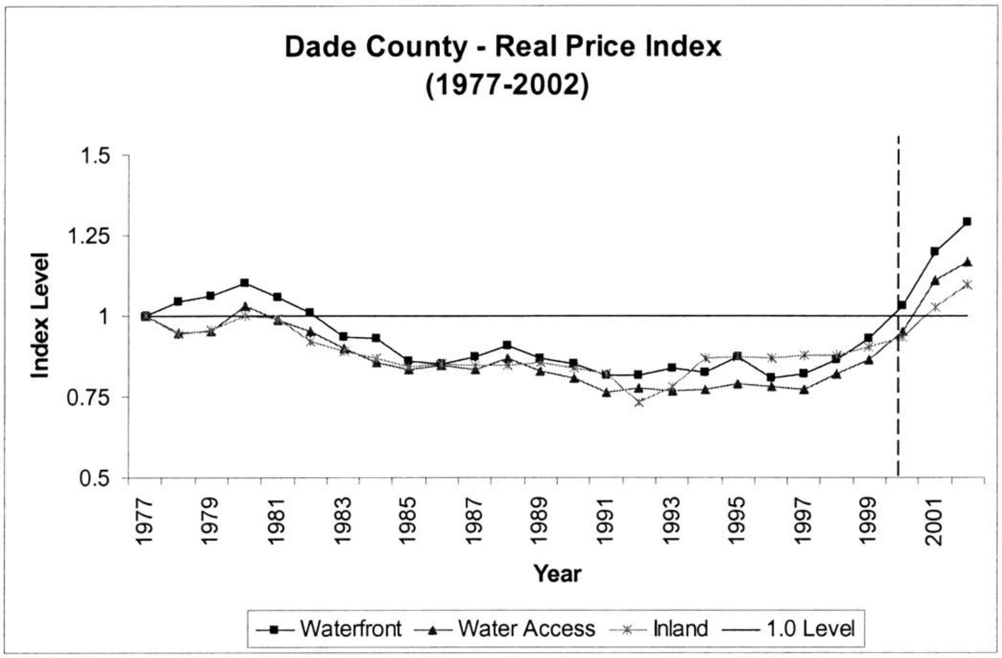
| | df | SS | MS | F | Prob > F |
|---|---|---|---|---|---|
| Regression | 25 | 1898.904 | 75.95617 | 1154.41 | 0 |
| Residual | 23210 | 1527.138 | 0.06580 | | |
| Total | 23235 | 3426.042 | 0.147451 | | |

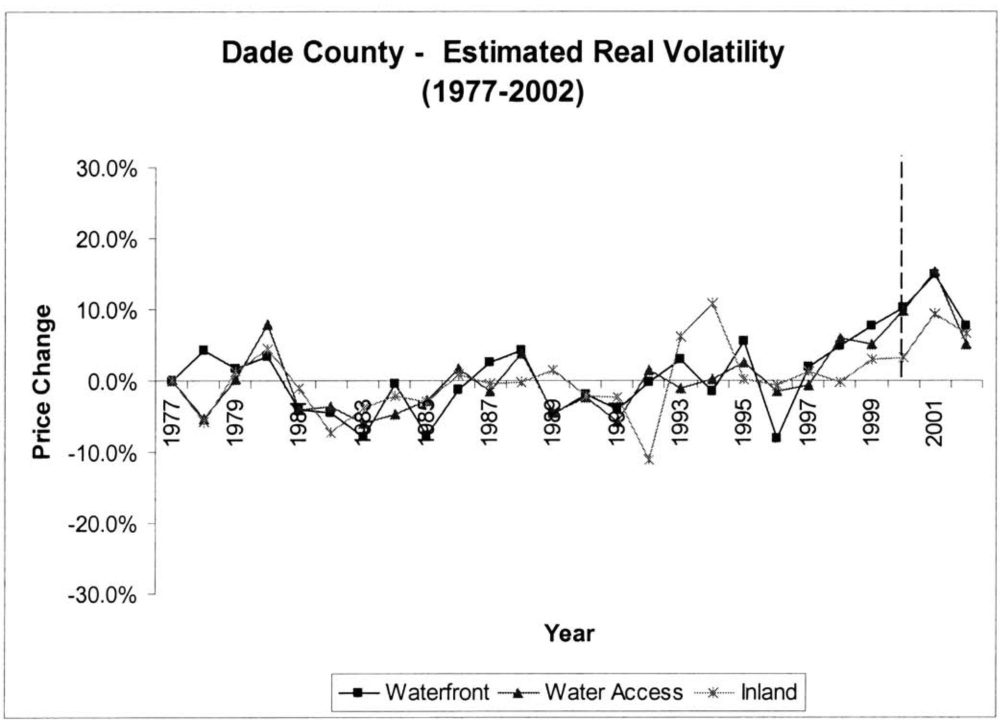
| Dummy | Coefficients | Standard Error | t Stat | P>\|t\| | Lower 95% | Upper 95% | Accumulated Appreciation | INDEX LEVEL |
|---|---|---|---|---|---|---|---|---|
| d1977 | 0.00% | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| d1978 | 19.49% | 0.00986 | 19.78 | 0 | 0.1756313 | 0.2142648 | 0.1949481 | 1.215247913 |
| d1979 | 13.06% | 0.01155 | 11.31 | 0 | 0.1079381 | 0.1532031 | 0.3255187 | 1.384748729 |
| d1980 | 10.78% | 0.01154 | 9.34 | 0 | 0.0851594 | 0.130399 | 0.4332979 | 1.542335614 |
| d1981 | 6.90% | 0.01258 | 5.48 | 0 | 0.0442911 | 0.0936115 | 0.5022492 | 1.652433748 |
| d1982 | -1.33% | 0.01384 | -0.96 | 0.335 | -0.0404466 | 0.0137921 | 0.488922 | 1.630557531 |
| d1983 | 4.10% | 0.01333 | 3.08 | 0.002 | 0.0148664 | 0.0671322 | 0.5299213 | 1.698798608 |
| d1984 | 4.60% | 0.01148 | 4 | 0 | 0.0234631 | 0.068451 | 0.5758783 | 1.778692066 |
| d1985 | 1.62% | 0.01064 | 1.52 | 0.128 | -0.0046559 | 0.0370732 | 0.592087 | 1.807757271 |
| d1986 | 3.96% | 0.00994 | 3.99 | 0 | 0.0201447 | 0.0591175 | 0.6317181 | 1.880839275 |
| d1987 | 2.64% | 0.00909 | 2.91 | 0.004 | 0.0086363 | 0.0442547 | 0.6581636 | 1.931242542 |
| d1988 | 1.28% | 0.00871 | 1.46 | 0.143 | -0.004326 | 0.0298363 | 0.6709188 | 1.956033699 |
| d1989 | 3.93% | 0.00864 | 4.55 | 0 | 0.0223622 | 0.0562489 | 0.7102243 | 2.034447534 |
| d1990 | 1.40% | 0.00851 | 1.65 | 0.1 | -0.0026786 | 0.0306827 | 0.7242264 | 2.063134442 |
| d1991 | -0.67% | 0.00870 | -0.77 | 0.443 | -0.0237134 | 0.0103751 | 0.7175573 | 2.049420971 |
| d1992 | 0.53% | 0.00872 | 0.61 | 0.542 | -0.0117824 | 0.0224104 | 0.7228713 | 2.060340582 |
| d1993 | 2.12% | 0.00818 | 2.6 | 0.009 | 0.0052008 | 0.0372559 | 0.7440996 | 2.104545649 |
| d1994 | 1.88% | 0.00770 | 2.44 | 0.015 | 0.0036826 | 0.0338709 | 0.7628764 | 2.144435612 |
| d1995 | 1.94% | 0.00768 | 2.53 | 0.011 | 0.0043793 | 0.0344729 | 0.7823025 | 2.186500892 |
| d1996 | 1.81% | 0.00764 | 2.37 | 0.018 | 0.0031289 | 0.0330743 | 0.8004041 | 2.226440451 |
| d1997 | 1.75% | 0.00748 | 2.34 | 0.019 | 0.0028234 | 0.032161 | 0.8178963 | 2.265728408 |
| d1998 | 4.02% | 0.00706 | 5.69 | 0 | 0.0263194 | 0.0539847 | 0.8580484 | 2.358553247 |
| d1999 | 3.91% | 0.00657 | 5.95 | 0 | 0.0262208 | 0.0519691 | 0.8971433 | 2.452586789 |
| d2000 | 7.79% | 0.00653 | 11.93 | 0 | 0.0651192 | 0.090723 | 0.9750644 | 2.651337952 |
| d2001 | 9.25% | 0.00689 | 13.44 | 0 | 0.0790519 | 0.1060422 | 1.0676115 | 2.908424425 |
| d2002 | 3.47% | 0.01098 | 3.17 | 0.002 | 0.0132287 | 0.0562544 | 1.102353 | 3.01124315 |

# APPENDIX IV

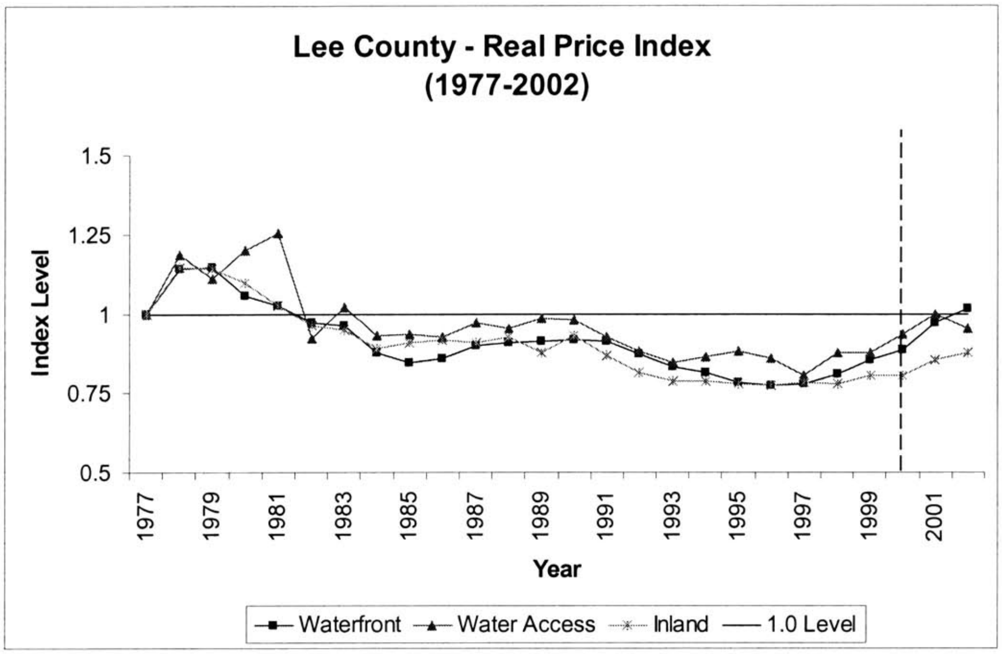
*REAL PRICE INDICES AND VOLATILITY CHARTS*

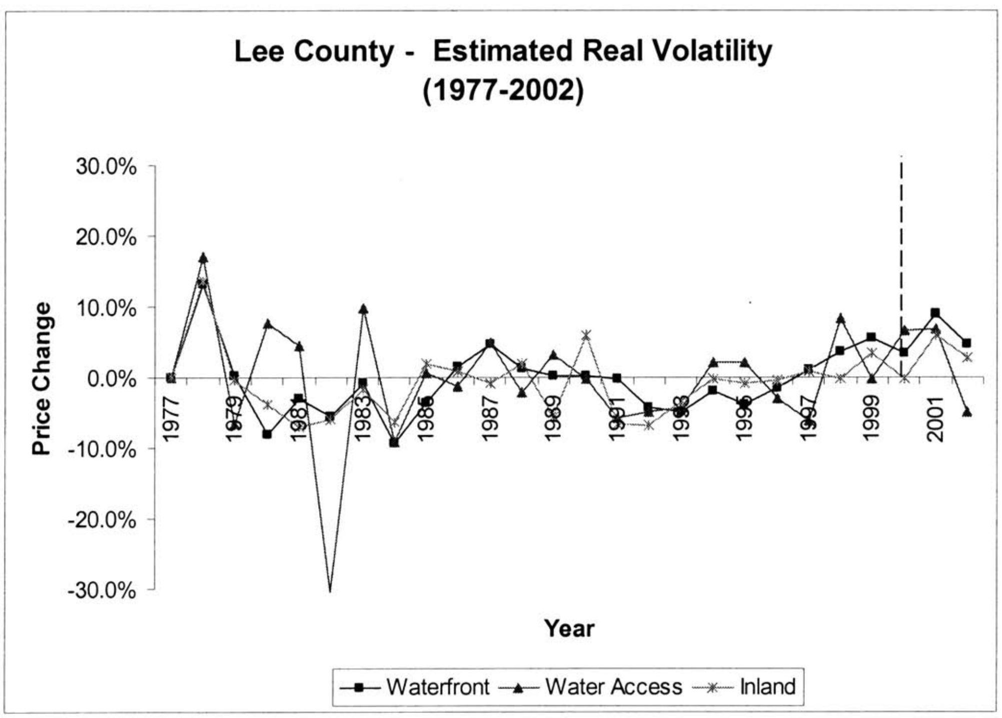
## Dade County (Miami)



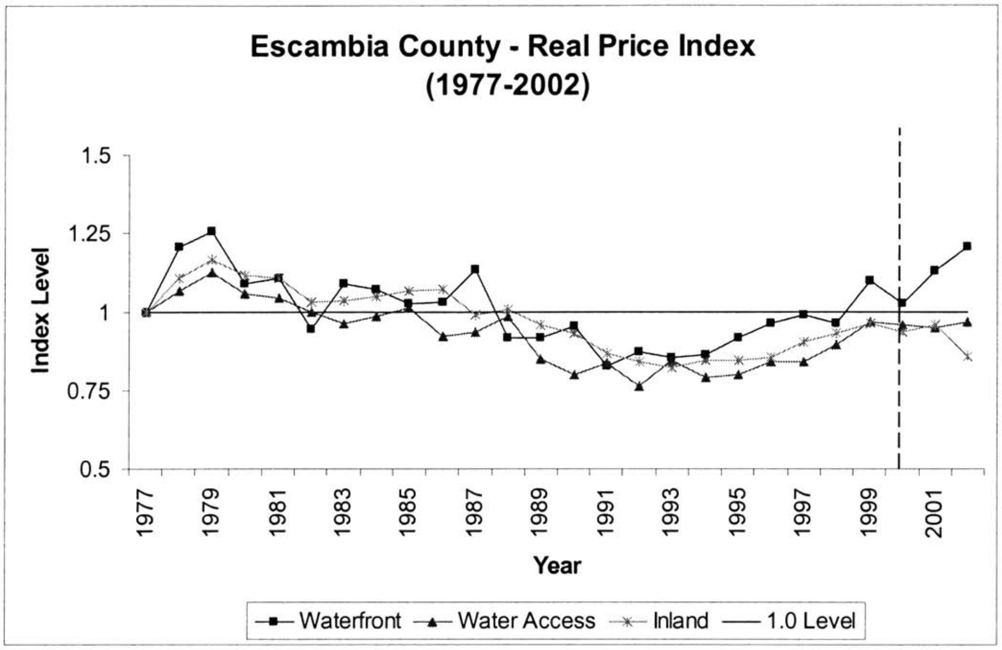



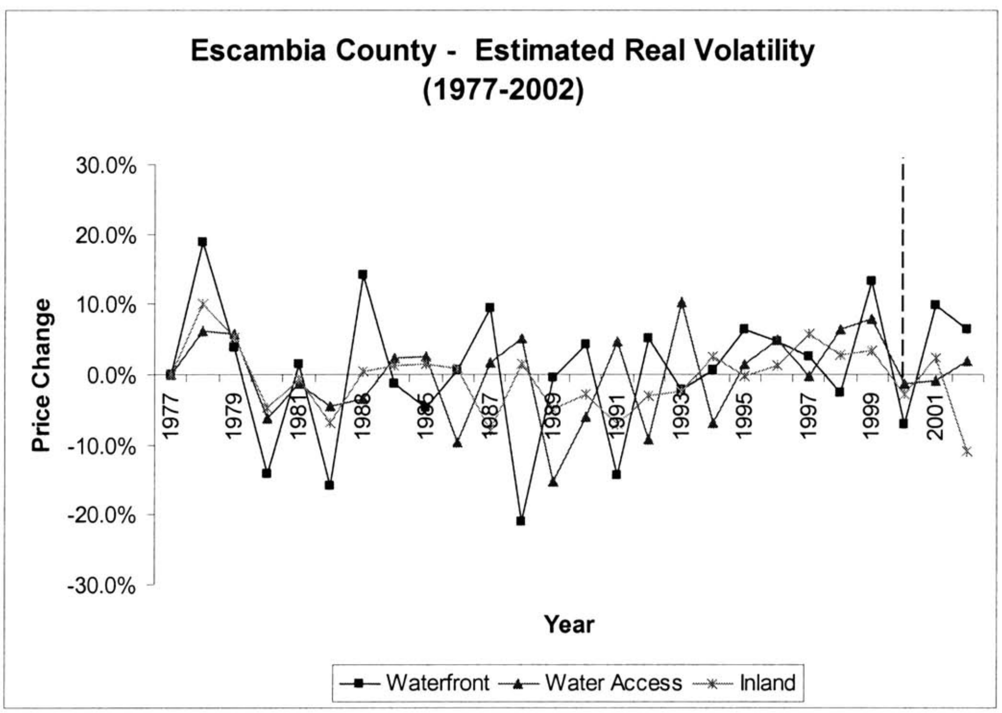
## Lee County (Ft. Myers)



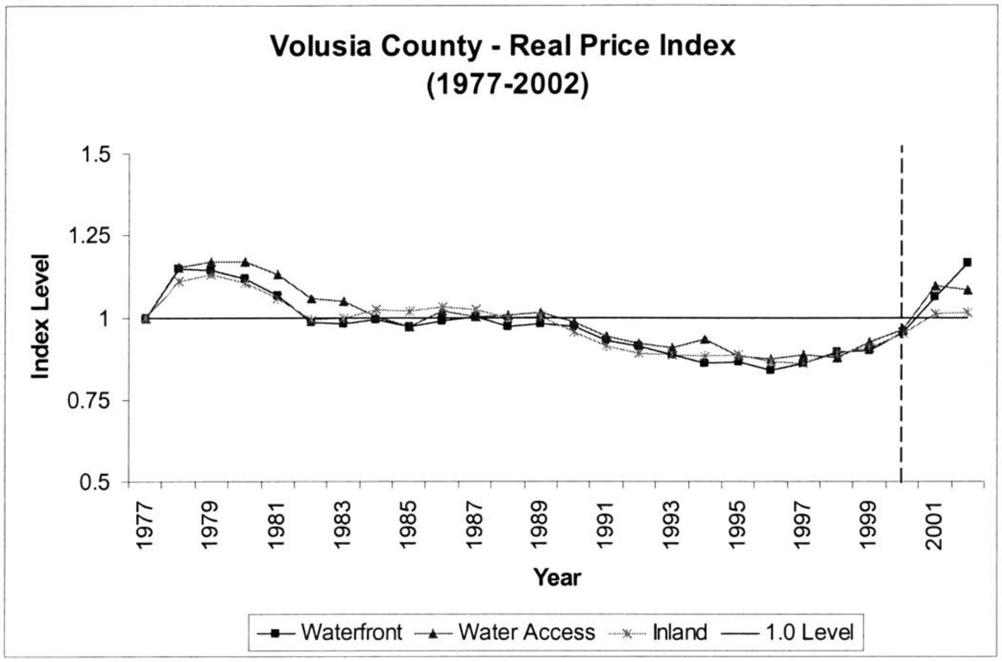



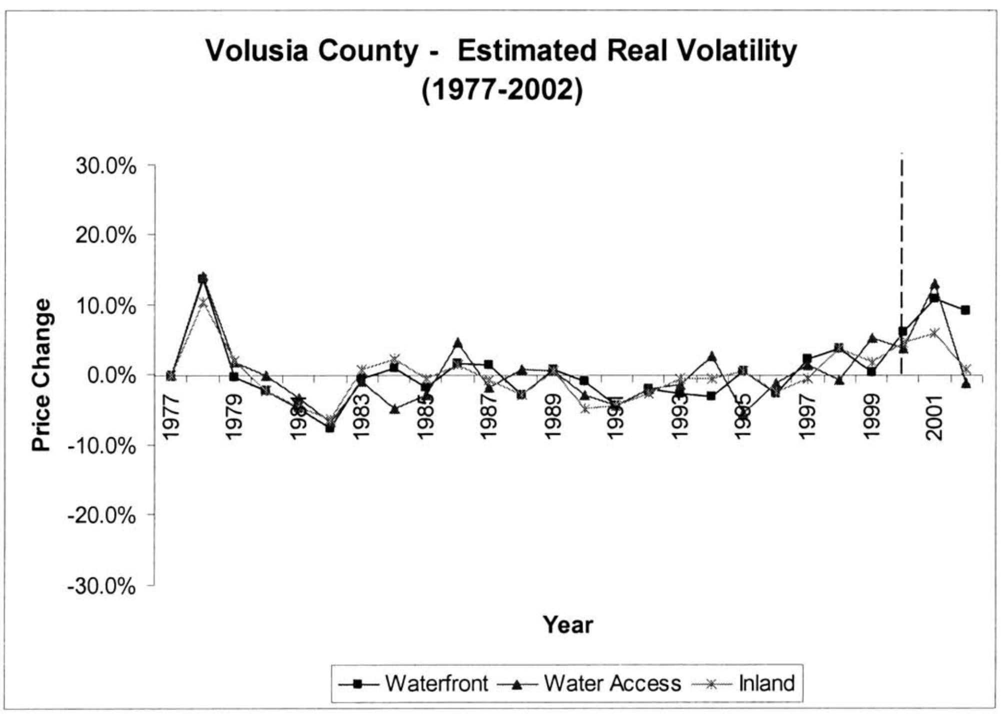
<u>**Escambia County (Pensacola)**</u>



## Volusia County (Daytona)

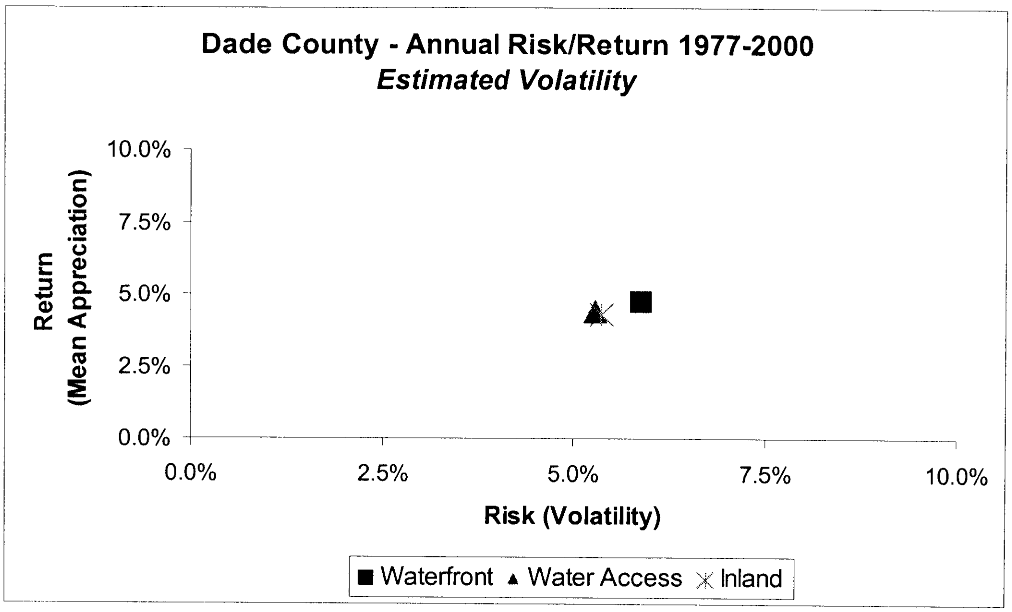


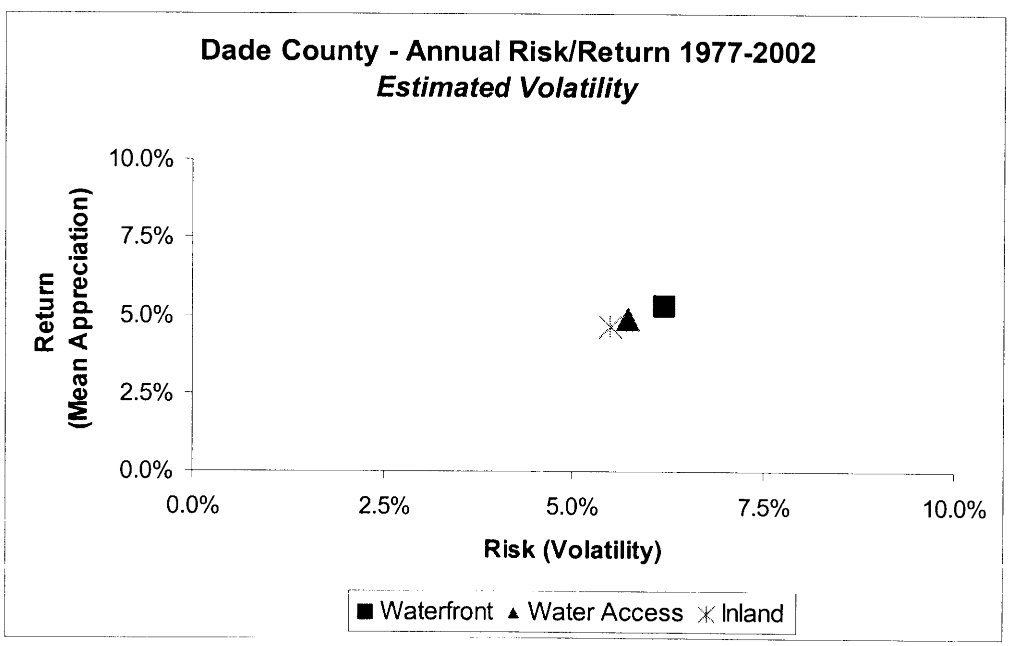



# APPENDIX V

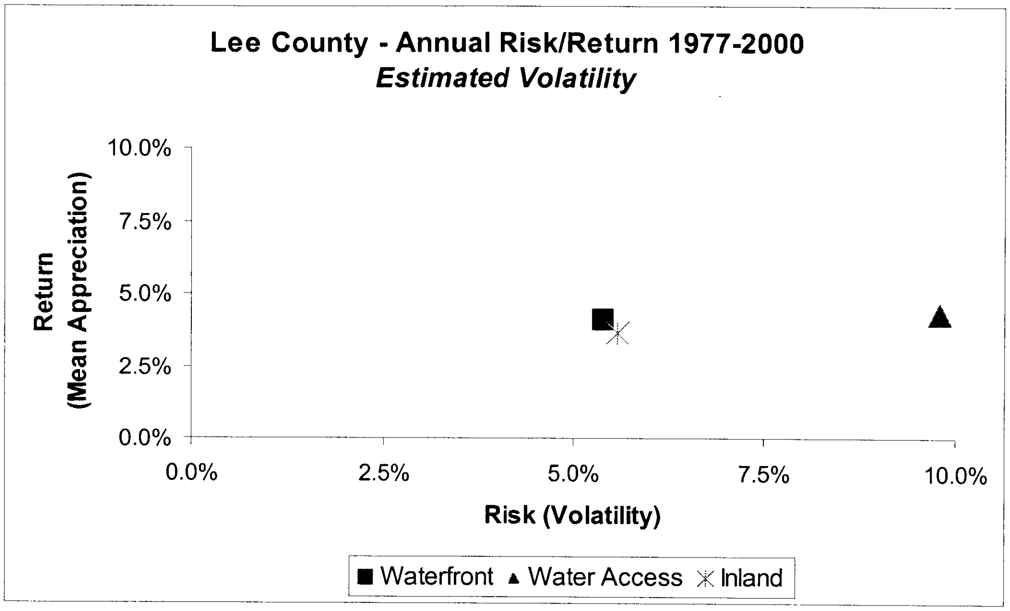
*RISK/RETURN PLOTS (ESTIMATED VOLATILITY)*

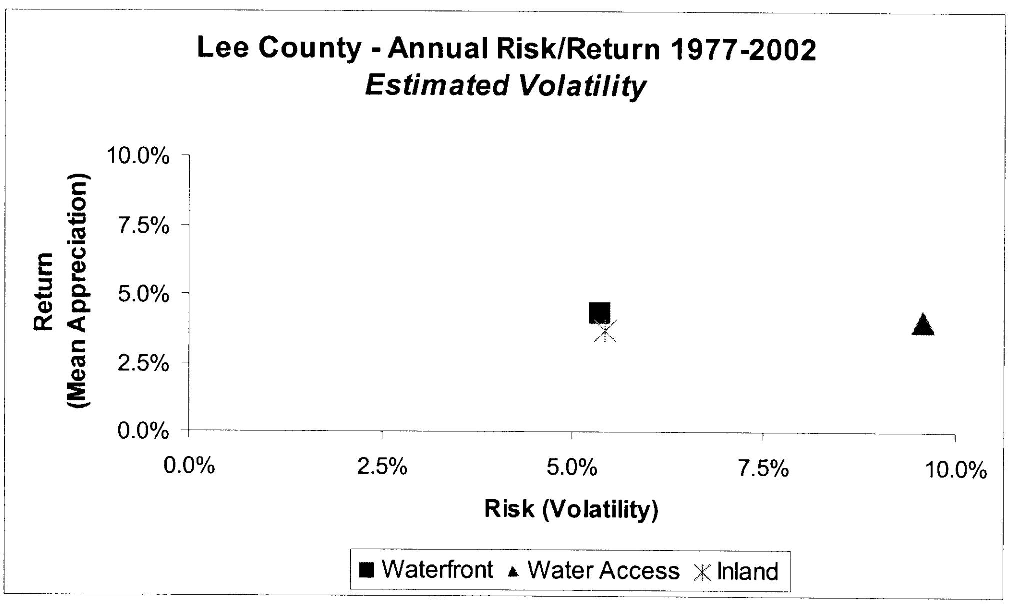
## Dade County (Miami)



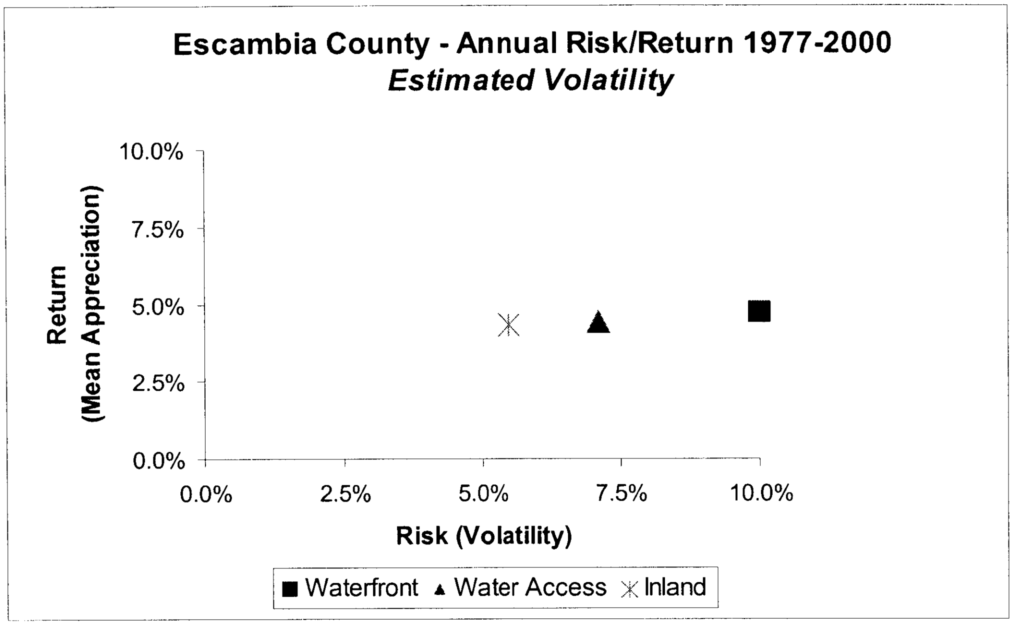



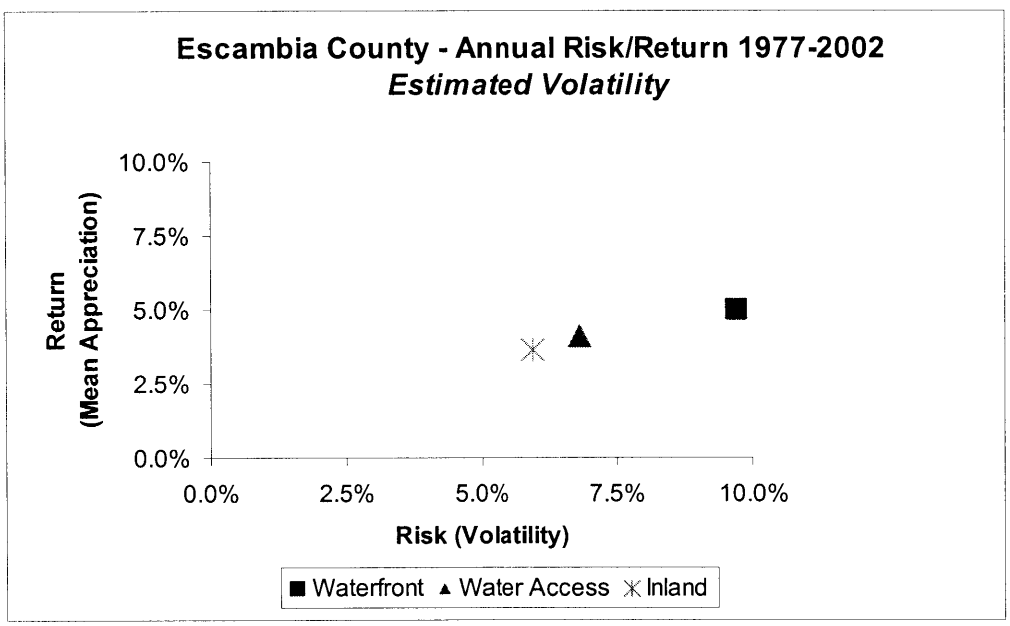
## Lee County (Ft. Myers)



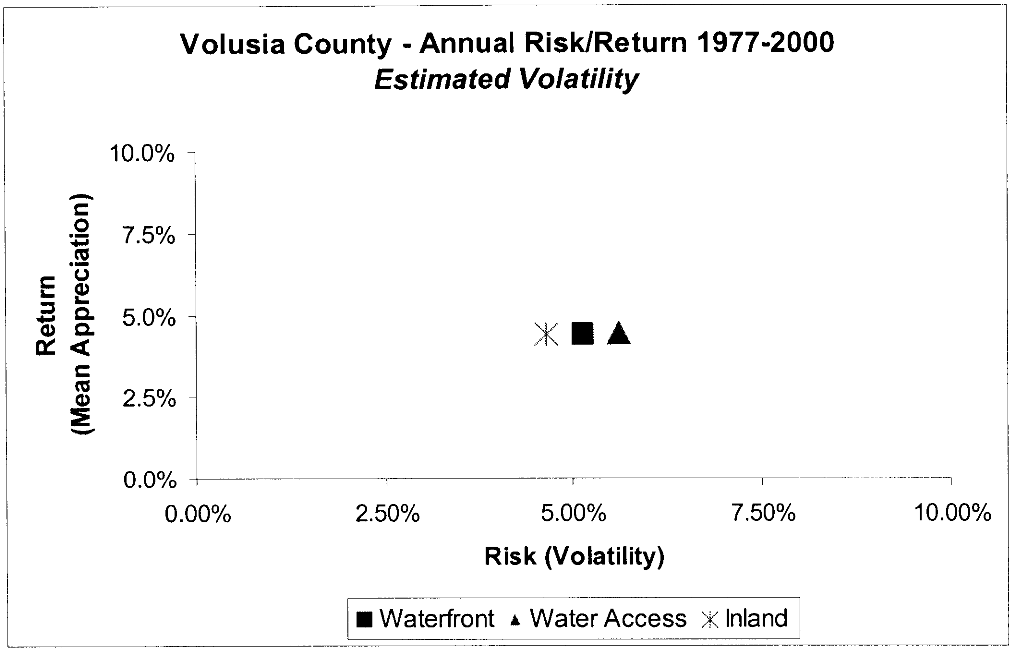



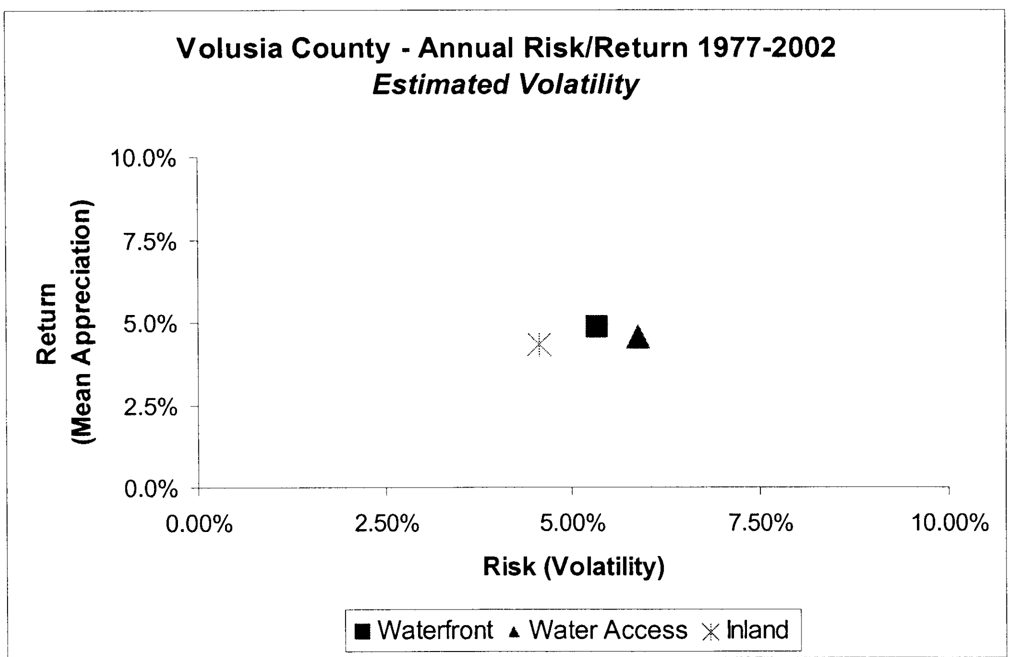
## Escambia County (Pensacola)



## Volusia County (Daytona)

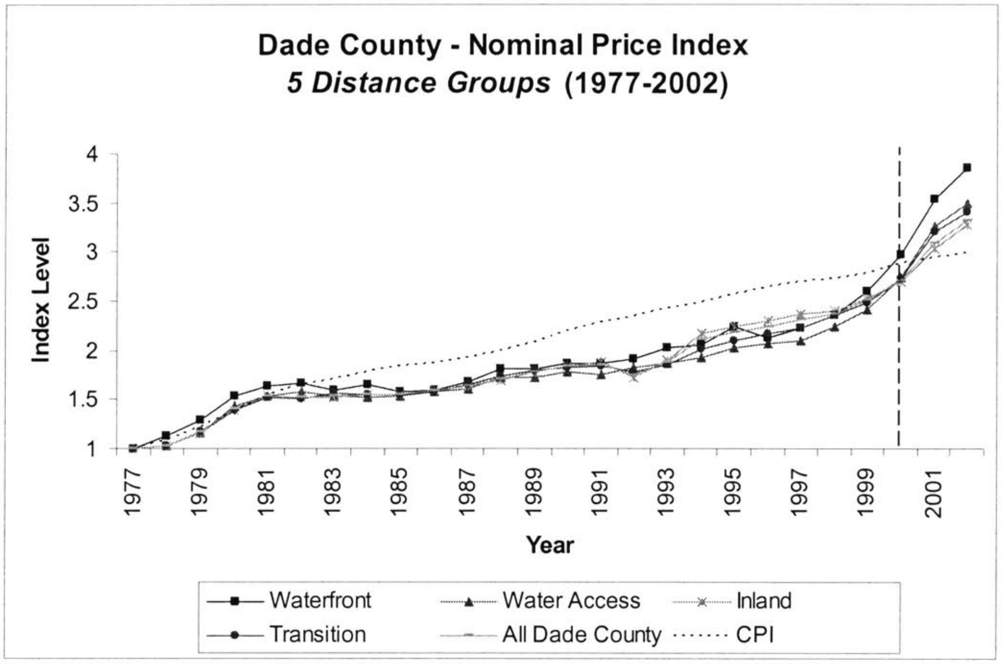


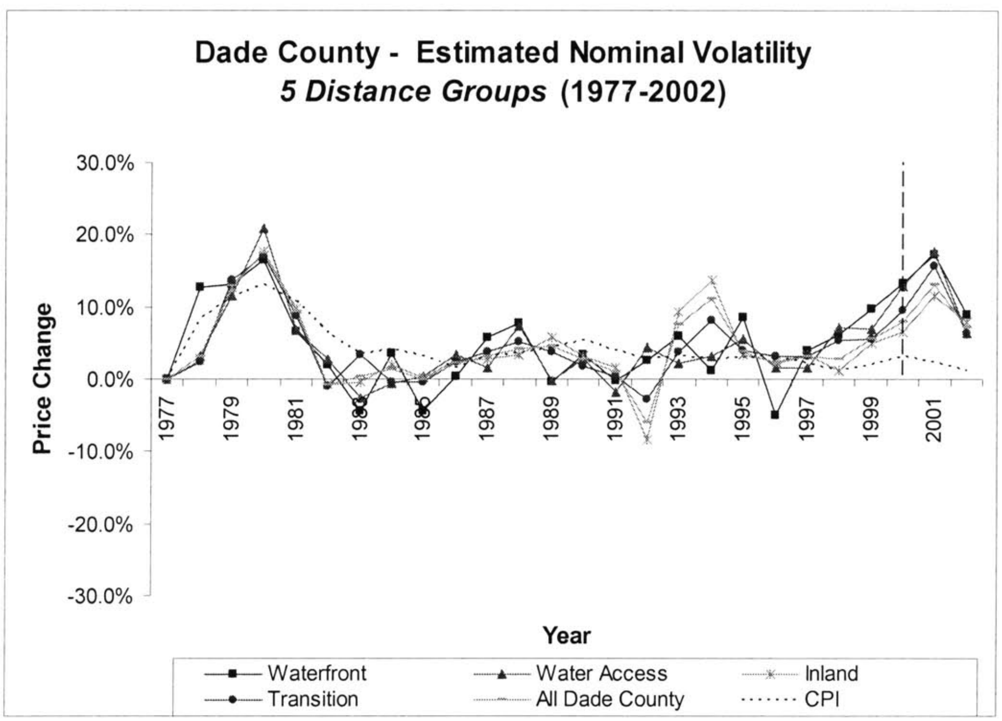



# APPENDIX VI

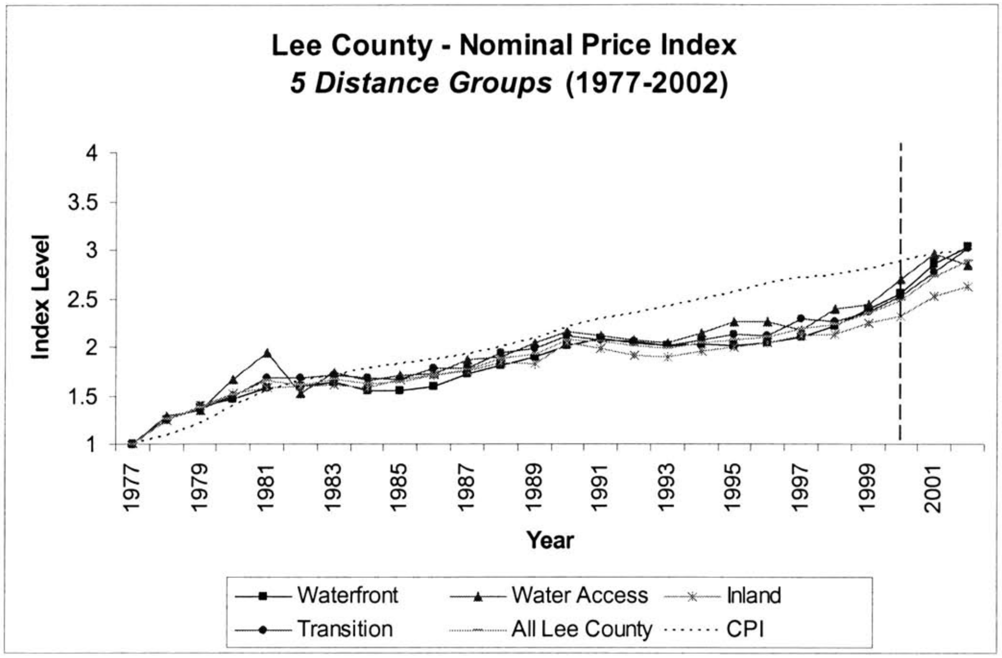
*PRICE INDICES AND VOLATILITY CHARTS (5 DISTANCE GROUPS)*

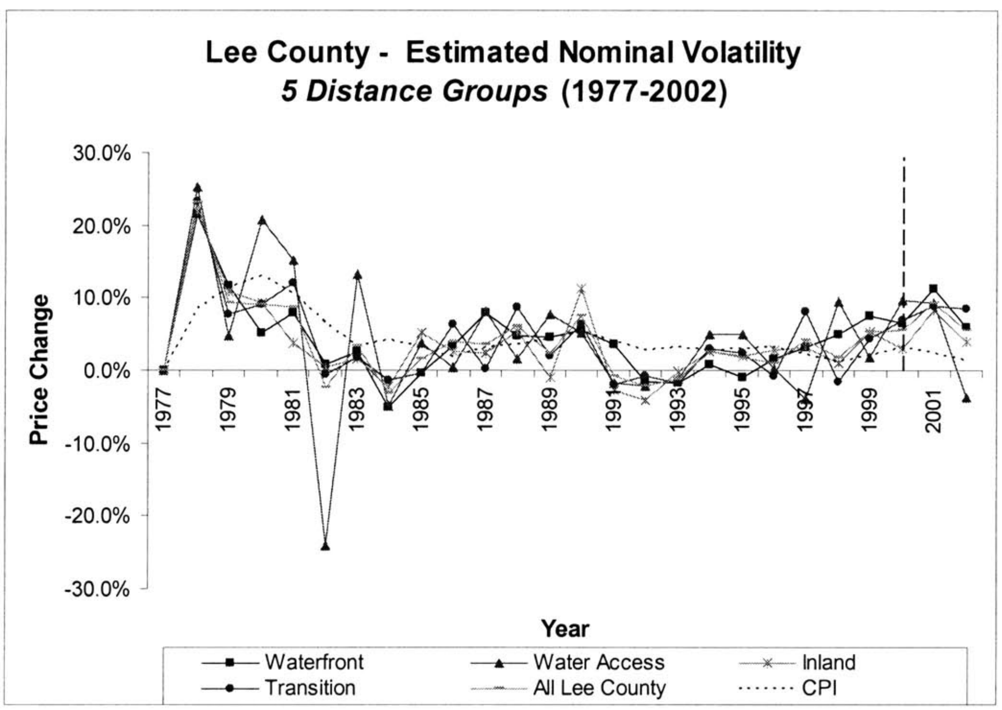
## Dade County (Miami)



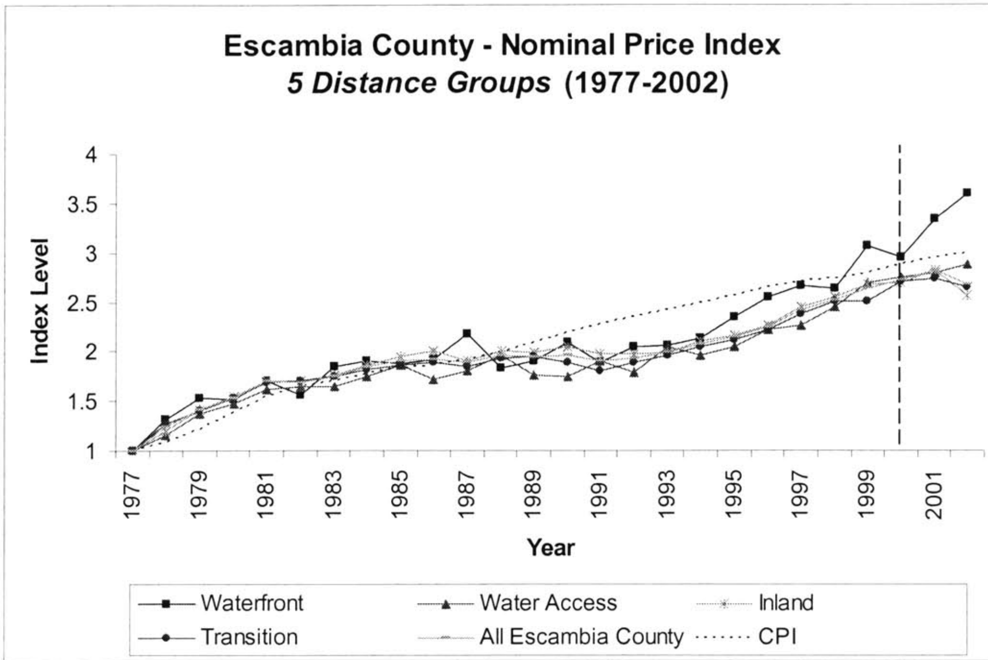



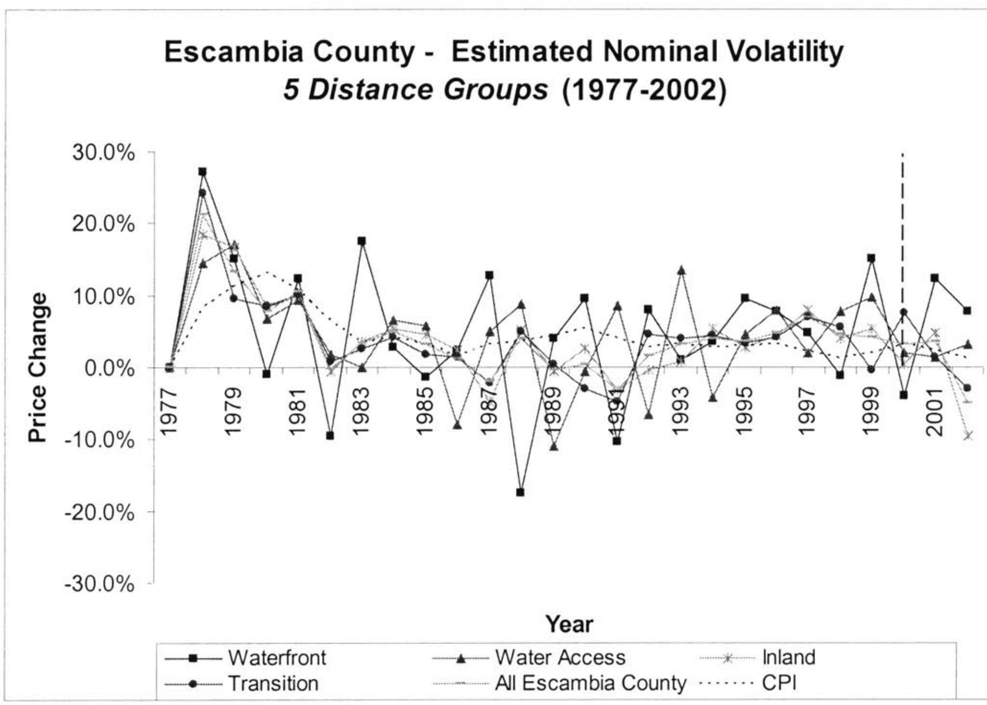
## Lee County (Ft. Myers)



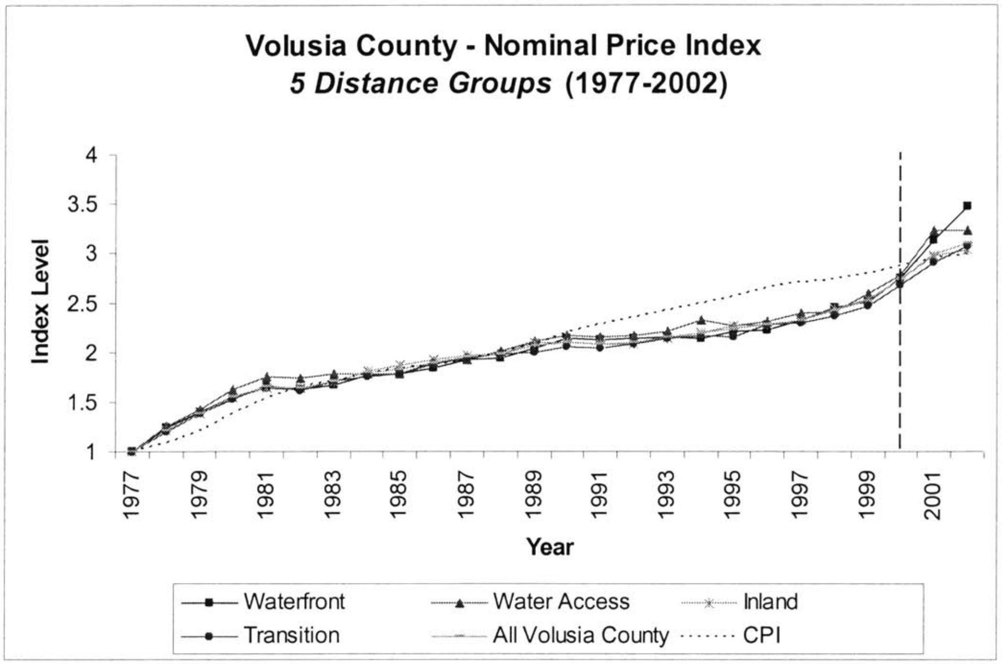



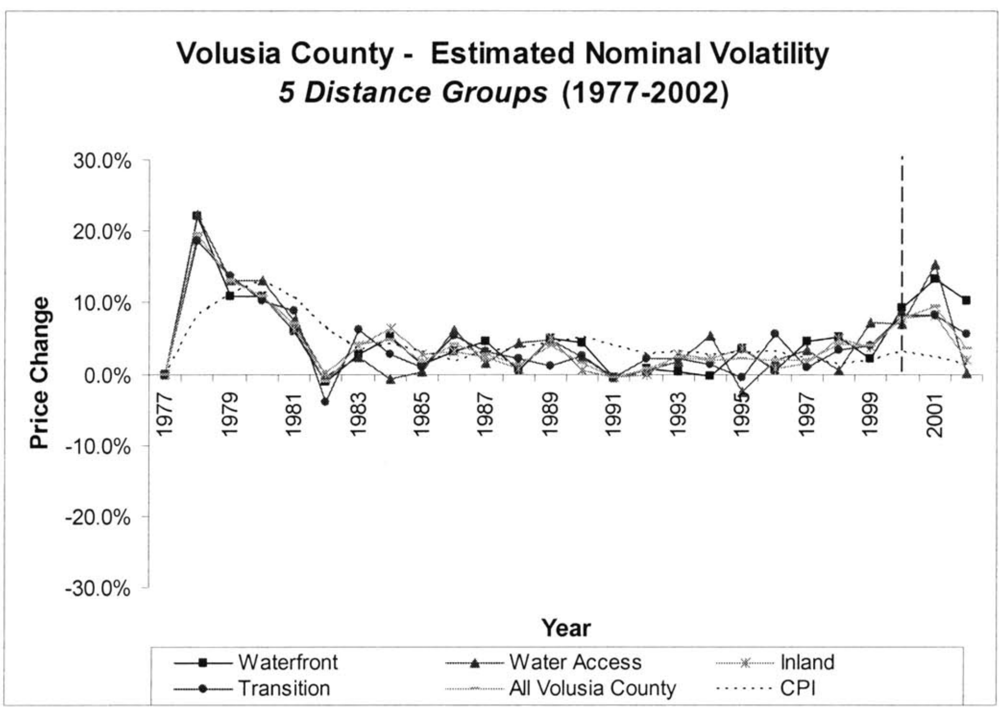
## Escambia County (Pensacola)



## Volusia County (Daytona)



# APPENDIX VII

## *RISK/RETURN PREMIA MATRICES (1977-2002)*

**Waterfront v. Inland (1977-2002)**
***Waterfront Avg. Annual Risk/Return Premia (Basis Points)***

| | Risk | Return |
|---|---|---|
| Dade County | -7 | +65 |
| Lee County | +34 | +59 |
| Escambia County | +8 | +136 |
| Volusia County | +16 | +55 |

**Waterfront v. Water Access (1977-2002)**
***Waterfront Avg. Annual Risk/Return Premia (Basis Points)***

| | Risk | Return |
|---|---|---|
| Dade County | +62 | +40 |
| Lee County | -315 | +26 |
| Escambia County | +14 | +90 |
| Volusia County | -84 | +29 |

# APPENDIX VIII

## *CROSS-CORRELATION MATRICES (1977-2002)*

**Cross-Correlation Matrices of Price Changes**
***1977-2002***

***Dade County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 84.10% | 1 | |
| Inland | 56.91% | 62.85% | 1 |

***Lee County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 58.96% | 1 | |
| Inland | 80.58% | 57.06% | 1 |

***Escambia County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 12.67% | 1 | |
| Inland | 39.58% | 47.42% | 1 |

***Volusia County***

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| Waterfront | 1 | | |
| Water Access | 79.65% | 1 | |
| Inland | 87.98% | 84.67% | 1 |

# APPENDIX IX

## *COUNTY PERFORMANCE COMPARISON TABLES (1977-2002)*

Waterfront Performance Measures (1977-2002)

| Waterfront | Dade | Lee | Escambia | Volusia |
|---|---|---|---|---|
| MEAN | 4.74% | 4.08% | 4.70% | 4.40% |
| MEDIAN | 4.05% | 3.61% | 3.95% | 3.47% |
| Estimated STDEV | 5.89% | 5.40% | 10.01% | 5.14% |
| Unbiased STDEV | 4.89% | 4.27% | 5.58% | 4.25% |

Water Access Performance Measures (1977-2002)

| Water Access | Dade | Lee | Escambia | Volusia |
|---|---|---|---|---|
| MEAN | 4.38% | 4.30% | 4.40% | 4.43% |
| MEDIAN | 3.08% | 4.79% | 5.75% | 2.41% |
| Estimated STDEV | 5.29% | 9.79% | 7.11% | 5.63% |
| Unbiased STDEV | 4.10% | 7.63% | 5.11% | 5.07% |

Inland Performance Measures (1977-2002)

| Inland | Dade | Lee | Escambia | Volusia |
|---|---|---|---|---|
| MEAN | 4.31% | 3.65% | 4.31% | 4.38% |
| MEDIAN | 3.18% | 2.63% | 4.03% | 3.07% |
| Estimated STDEV | 5.49% | 5.60% | 5.49% | 4.66% |
| Unbiased STDEV | 5.37% | 4.06% | 4.55% | 4.45% |

# APPENDIX X

## *PERIOD-BY-PERIOD RETURNS*

## Waterfront

W aterfront Annual Price Changes (0-250m)

| | *CPI* | *Dade County* | | *Lee County* | | *Escambia County* | | *Volusia County* | |
|---|---|---|---|---|---|---|---|---|---|
| | | Nominal | Real | Nominal | Real | Nominal | Real | Nominal | Real |
| **1977** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **1978** | 8.33% | 12.66% | 4.33% | 21.51% | 13.17% | 27.24% | 18.90% | 22.06% | 13.72% |
| **1979** | 11.38% | 13.12% | 1.74% | 11.63% | 0.24% | 15.14% | 3.76% | 10.98% | -0.40% |
| **1980** | 13.12% | 16.53% | 3.41% | 5.05% | -8.07% | -1.08% | -14.20% | 10.87% | -2.26% |
| **1981** | 10.74% | 6.64% | -4.10% | 7.84% | -2.90% | 12.33% | 1.58% | 5.97% | -4.78% |
| **1982** | 6.39% | 1.95% | -4.44% | 0.78% | -5.61% | -9.56% | -15.95% | -1.21% | -7.61% |
| **1983** | 3.32% | -4.46% | -7.78% | 2.56% | -0.75% | 17.52% | 14.21% | 2.82% | -0.49% |
| **1984** | 4.11% | 3.64% | -0.47% | -5.21% | -9.32% | 2.73% | -1.38% | 5.12% | 1.01% |
| **1985** | 3.18% | -4.39% | -7.57% | -0.37% | -3.54% | -1.46% | -4.64% | 1.29% | -1.89% |
| **1986** | 1.68% | 0.31% | -1.37% | 3.26% | 1.58% | 2.32% | 0.64% | 3.25% | 1.57% |
| **1987** | 3.21% | 5.70% | 2.49% | 7.82% | 4.60% | 12.73% | 9.51% | 4.58% | 1.36% |
| **1988** | 3.56% | 7.77% | 4.21% | 4.75% | 1.19% | -17.41% | -20.97% | 0.59% | -2.97% |
| **1989** | 4.38% | -0.33% | -4.71% | 4.64% | 0.26% | 3.95% | -0.43% | 5.04% | 0.65% |
| **1990** | 5.27% | 3.29% | -1.97% | 5.56% | 0.30% | 9.52% | 4.26% | 4.37% | -0.90% |
| **1991** | 3.91% | -0.15% | -4.06% | 3.61% | -0.30% | -10.36% | -14.27% | -0.46% | -4.37% |
| **1992** | 2.71% | 2.52% | -0.19% | -1.64% | -4.35% | 7.95% | 5.24% | 0.76% | -1.95% |
| **1993** | 3.15% | 6.03% | 2.88% | -1.74% | -4.89% | 1.07% | -2.08% | 0.40% | -2.75% |
| **1994** | 2.77% | 1.24% | -1.53% | 0.76% | -2.01% | 3.48% | 0.71% | -0.40% | -3.17% |
| **1995** | 2.97% | 8.53% | 5.56% | -0.90% | -3.87% | 9.50% | 6.53% | 3.47% | 0.50% |
| **1996** | 3.09% | -4.96% | -8.04% | 1.52% | -1.57% | 7.75% | 4.66% | 0.50% | -2.59% |
| **1997** | 2.15% | 4.05% | 1.90% | 3.18% | 1.03% | 4.79% | 2.65% | 4.51% | 2.36% |
| **1998** | 1.27% | 6.24% | 4.96% | 4.95% | 3.68% | -1.22% | -2.49% | 5.11% | 3.84% |
| **1999** | 1.95% | 9.68% | 7.72% | 7.59% | 5.64% | 15.20% | 13.25% | 2.23% | 0.28% |
| **2000** | 3.21% | 13.36% | 10.15% | 6.61% | 3.40% | -3.94% | -7.15% | 9.29% | 6.08% |
| **2001** | 2.33% | 17.22% | 14.89% | 11.34% | 9.00% | 12.24% | 9.91% | 13.23% | 10.90% |
| **2002** | 1.29% | 8.88% | 7.59% | 5.97% | 4.68% | 7.71% | 6.43% | 10.34% | 9.05% |
| **MEAN 77-00** | 4.41% | 4.54% | 0.13% | 3.91% | -0.51% | 4.51% | 0.10% | 4.21% | -0.20% |
| **MEAN 77-02** | 4.21% | 5.19% | 0.98% | 4.27% | 0.06% | 4.93% | 0.72% | 4.80% | 0.58% |

## Water Access

Water Access Annual Price Changes (251-500m)

| | CPI | Dade County | | Lee County | | Escambia County | | Volusia County | |
|---|---|---|---|---|---|---|---|---|---|
| | | Nominal | Real | Nominal | Real | Nominal | Real | Nominal | Real |
| 1977 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| 1978 | 8.33% | 3.10% | -5.23% | 25.27% | 16.93% | 14.56% | 6.22% | 22.34% | 14.01% |
| 1979 | 11.38% | 11.60% | 0.22% | 4.79% | -6.59% | 17.07% | 5.69% | 13.20% | 1.82% |
| 1980 | 13.12% | 20.95% | 7.83% | 20.79% | 7.67% | 6.85% | -6.27% | 13.07% | -0.05% |
| 1981 | 10.74% | 6.73% | -4.01% | 15.15% | 4.40% | 9.36% | -1.39% | 7.41% | -3.33% |
| 1982 | 6.39% | 2.82% | -3.57% | -24.12% | -30.51% | 1.79% | -4.60% | -0.28% | -6.67% |
| 1983 | 3.32% | -2.63% | -5.95% | 13.20% | 9.89% | -0.05% | -3.37% | 2.41% | -0.91% |
| 1984 | 4.11% | -0.57% | -4.69% | -5.01% | -9.12% | 6.46% | 2.35% | -0.67% | -4.78% |
| 1985 | 3.18% | 0.33% | -2.85% | 3.80% | 0.62% | 5.75% | 2.57% | 0.34% | -2.84% |
| 1986 | 1.68% | 3.36% | 1.68% | 0.48% | -1.20% | -7.87% | -9.55% | 6.28% | 4.60% |
| 1987 | 3.21% | 1.68% | -1.53% | 8.12% | 4.91% | 4.96% | 1.74% | 1.48% | -1.73% |
| 1988 | 3.56% | 7.33% | 3.77% | 1.52% | -2.03% | 8.72% | 5.16% | 4.28% | 0.72% |
| 1989 | 4.38% | -0.12% | -4.50% | 7.68% | 3.29% | -10.87% | -15.25% | 4.88% | 0.50% |
| 1990 | 5.27% | 2.86% | -2.41% | 5.05% | -0.22% | -0.67% | -5.94% | 2.26% | -3.00% |
| 1991 | 3.91% | -1.86% | -5.77% | -1.77% | -5.68% | 8.56% | 4.65% | -0.42% | -4.33% |
| 1992 | 2.71% | 4.30% | 1.59% | -2.18% | -4.89% | -6.52% | -9.23% | 0.61% | -2.10% |
| 1993 | 3.15% | 2.17% | -0.98% | -1.12% | -4.27% | 13.46% | 10.31% | 1.78% | -1.37% |
| 1994 | 2.77% | 3.08% | 0.31% | 4.94% | 2.17% | -4.10% | -6.87% | 5.36% | 2.59% |
| 1995 | 2.97% | 5.53% | 2.56% | 5.02% | 2.05% | 4.51% | 1.54% | -2.48% | -5.45% |
| 1996 | 3.09% | 1.64% | -1.45% | 0.18% | -2.91% | 7.92% | 4.83% | 1.95% | -1.14% |
| 1997 | 2.15% | 1.50% | -0.65% | -3.96% | -6.11% | 1.91% | -0.24% | 3.44% | 1.29% |
| 1998 | 1.27% | 7.14% | 5.87% | 9.57% | 8.30% | 7.70% | 6.42% | 0.61% | -0.67% |
| 1999 | 1.95% | 6.99% | 5.04% | 1.84% | -0.11% | 9.81% | 7.86% | 7.17% | 5.22% |
| 2000 | 3.21% | 12.90% | 9.69% | 9.72% | 6.51% | 1.98% | -1.23% | 6.93% | 3.72% |
| 2001 | 2.33% | 17.68% | 15.34% | 9.22% | 6.89% | 1.43% | -0.90% | 15.34% | 13.01% |
| 2002 | 1.29% | 6.43% | 5.14% | -3.69% | -4.97% | 3.13% | 1.85% | 0.15% | -1.14% |
| MEAN 77-00 | 4.41% | 4.20% | -0.21% | 4.12% | -0.29% | 4.22% | -0.19% | 4.25% | -0.16% |
| MEAN 77-02 | 4.21% | 4.81% | 0.59% | 4.02% | -0.19% | 4.07% | -0.14% | 4.52% | 0.31% |

# Inland

**Inland Annual Price Changes (2501-Max)**

| | *CPI* | *Dade County* | | *Lee County* | | *Escambia County* | | *Volusia County* | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Nominal** | **Real** | **Nominal** | **Real** | **Nominal** | **Real** | **Nominal** | **Real** |
| **1977** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **1978** | 8.33% | 2.58% | -5.75% | 21.93% | 13.59% | 18.49% | 10.16% | 18.84% | 10.51% |
| **1979** | 11.38% | 12.69% | 1.31% | 10.90% | -0.49% | 16.66% | 5.28% | 13.33% | 1.95% |
| **1980** | 13.12% | 17.67% | 4.55% | 9.35% | -3.77% | 8.41% | -4.71% | 10.78% | -2.34% |
| **1981** | 10.74% | 9.74% | -1.01% | 3.79% | -6.96% | 10.03% | -0.72% | 6.11% | -4.64% |
| **1982** | 6.39% | -0.75% | -7.14% | 0.35% | -6.05% | -0.54% | -6.94% | 0.08% | -6.31% |
| **1983** | 3.32% | -0.43% | -3.75% | 1.66% | -1.65% | 3.67% | 0.35% | 4.04% | 0.73% |
| **1984** | 4.11% | 1.97% | -2.14% | -2.32% | -6.43% | 5.42% | 1.31% | 6.44% | 2.32% |
| **1985** | 3.18% | 0.17% | -3.01% | 5.15% | 1.97% | 4.64% | 1.46% | 2.74% | -0.44% |
| **1986** | 1.68% | 2.49% | 0.81% | 2.58% | 0.90% | 2.47% | 0.79% | 3.07% | 1.39% |
| **1987** | 3.21% | 2.74% | -0.47% | 2.38% | -0.84% | -4.75% | -7.96% | 2.44% | -0.78% |
| **1988** | 3.56% | 3.32% | -0.24% | 5.40% | 1.85% | 5.16% | 1.60% | 0.76% | -2.80% |
| **1989** | 4.38% | 5.78% | 1.40% | -1.08% | -5.46% | -0.64% | -5.02% | 4.99% | 0.61% |
| **1990** | 5.27% | 3.18% | -2.09% | 11.30% | 6.03% | 2.53% | -2.74% | 0.44% | -4.83% |
| **1991** | 3.91% | 1.66% | -2.25% | -2.74% | -6.65% | -3.16% | -7.07% | -0.50% | -4.40% |
| **1992** | 2.71% | -8.44% | -11.15% | -4.10% | -6.81% | -0.32% | -3.03% | -0.02% | -2.73% |
| **1993** | 3.15% | 9.30% | 6.15% | -0.17% | -3.32% | 0.85% | -2.30% | 2.69% | -0.46% |
| **1994** | 2.77% | 13.64% | 10.87% | 2.63% | -0.14% | 5.28% | 2.51% | 2.20% | -0.57% |
| **1995** | 2.97% | 3.28% | 0.31% | 2.06% | -0.91% | 2.84% | -0.13% | 3.54% | 0.57% |
| **1996** | 3.09% | 2.47% | -0.62% | 2.70% | -0.39% | 4.46% | 1.37% | 0.70% | -2.38% |
| **1997** | 2.15% | 3.47% | 1.32% | 3.10% | 0.95% | 7.86% | 5.71% | 1.56% | -0.58% |
| **1998** | 1.27% | 1.15% | -0.13% | 0.97% | -0.30% | 4.03% | 2.76% | 4.94% | 3.67% |
| **1999** | 1.95% | 4.97% | 3.02% | 5.27% | 3.32% | 5.29% | 3.34% | 3.76% | 1.81% |
| **2000** | 3.21% | 6.50% | 3.29% | 2.91% | -0.30% | 0.37% | -2.84% | 7.78% | 4.57% |
| **2001** | 2.33% | 11.62% | 9.28% | 8.39% | 6.06% | 4.72% | 2.39% | 8.33% | 5.99% |
| **2002** | 1.29% | 7.88% | 6.60% | 3.95% | 2.67% | -9.56% | -10.85% | 1.99% | 0.70% |
| **MEAN 77-00** | 4.41% | 4.13% | -0.28% | 3.50% | -0.91% | 4.13% | -0.28% | 4.20% | -0.21% |
| **MEAN 77-02** | 4.21% | 4.56% | 0.35% | 3.71% | -0.50% | 3.62% | -0.59% | 4.27% | 0.06% |

# Transition

**Transition Annual Price Changes (501-2500m)**

| | *CPI* | *Dade County* | | *Lee County* | | *Escambia County* | | *Volusia County* | |
|---|---|---|---|---|---|---|---|---|---|
| | | Nominal | Real | Nominal | Real | Nominal | Real | Nominal | Real |
| **1977** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **1978** | 8.33% | 2.39% | -5.94% | 23.20% | 14.87% | 24.23% | 15.90% | 18.57% | 10.23% |
| **1979** | 11.38% | 13.62% | 2.23% | 7.76% | -3.63% | 9.61% | -1.78% | 13.79% | 2.40% |
| **1980** | 13.12% | 17.10% | 3.98% | 9.12% | -4.00% | 8.46% | -4.66% | 10.24% | -2.88% |
| **1981** | 10.74% | 8.78% | -1.97% | 11.96% | 1.22% | 10.20% | -0.55% | 8.88% | -1.86% |
| **1982** | 6.39% | -0.95% | -7.34% | -0.50% | -6.90% | 0.88% | -5.52% | -3.98% | -10.37% |
| **1983** | 3.32% | 3.42% | 0.11% | 1.73% | -1.59% | 2.54% | -0.78% | 6.24% | 2.93% |
| **1984** | 4.11% | -0.38% | -4.49% | -1.43% | -5.55% | 4.19% | 0.08% | 2.74% | -1.38% |
| **1985** | 3.18% | -0.39% | -3.57% | -0.49% | -3.67% | 1.76% | -1.41% | 0.97% | -2.21% |
| **1986** | 1.68% | 2.40% | 0.72% | 6.24% | 4.56% | 1.48% | -0.20% | 5.43% | 3.75% |
| **1987** | 3.21% | 3.78% | 0.56% | 0.18% | -3.04% | -2.11% | -5.32% | 3.10% | -0.12% |
| **1988** | 3.56% | 5.07% | 1.51% | 8.77% | 5.21% | 5.02% | 1.46% | 2.17% | -1.38% |
| **1989** | 4.38% | 3.74% | -0.65% | 2.04% | -2.34% | 0.40% | -3.98% | 1.21% | -3.18% |
| **1990** | 5.27% | 1.74% | -3.53% | 6.29% | 1.03% | -3.02% | -8.29% | 2.54% | -2.72% |
| **1991** | 3.91% | 0.31% | -3.60% | -1.96% | -5.87% | -4.69% | -8.60% | -0.59% | -4.50% |
| **1992** | 2.71% | -2.79% | -5.50% | -0.79% | -3.50% | 4.53% | 1.82% | 2.23% | -0.48% |
| **1993** | 3.15% | 3.84% | 0.69% | -1.78% | -4.93% | 3.98% | 0.83% | 2.17% | -0.98% |
| **1994** | 2.77% | 8.15% | 5.38% | 2.87% | 0.10% | 4.44% | 1.67% | 1.29% | -1.48% |
| **1995** | 2.97% | 4.05% | 1.08% | 2.45% | -0.53% | 3.48% | 0.51% | -0.49% | -3.47% |
| **1996** | 3.09% | 3.19% | 0.10% | -0.79% | -3.88% | 4.15% | 1.07% | 5.65% | 2.56% |
| **1997** | 2.15% | 3.12% | 0.97% | 8.09% | 5.95% | 6.98% | 4.84% | 0.89% | -1.26% |
| **1998** | 1.27% | 5.44% | 4.17% | -1.51% | -2.78% | 5.64% | 4.36% | 3.26% | 1.99% |
| **1999** | 1.95% | 5.47% | 3.52% | 4.38% | 2.43% | -0.37% | -2.32% | 4.02% | 2.07% |
| **2000** | 3.21% | 9.58% | 6.37% | 6.86% | 3.65% | 7.58% | 4.37% | 8.16% | 4.95% |
| **2001** | 2.33% | 15.72% | 13.38% | 8.88% | 6.55% | 1.36% | -0.97% | 8.24% | 5.90% |
| **2002** | 1.29% | 6.27% | 4.98% | 8.55% | 7.26% | -2.99% | -4.27% | 5.59% | 4.30% |
| **MEAN 77-00** | 4.41% | 4.20% | -0.22% | 3.86% | -0.55% | 4.14% | -0.27% | 4.10% | -0.31% |
| **MEAN 77-02** | 4.21% | 4.72% | 0.51% | 4.24% | 0.02% | 3.76% | -0.45% | 4.32% | 0.11% |

# Countywide

**Countywide Annual Price Changes (0-Max)**

| | CPI | Dade County | | Lee County | | Escambia County | | Volusia County | |
|---|---|---|---|---|---|---|---|---|---|
| | | Nominal | Real | Nominal | Real | Nominal | Real | Nominal | Real |
| **1977** | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **1978** | 8.33% | 3.09% | -5.24% | 23.11% | 14.78% | 21.30% | 12.97% | 19.62% | 11.29% |
| **1979** | 11.38% | 12.98% | 1.60% | 9.27% | -2.12% | 13.36% | 1.97% | 13.18% | 1.80% |
| **1980** | 13.12% | 17.48% | 4.35% | 9.09% | -4.03% | 7.70% | -5.42% | 10.90% | -2.22% |
| **1981** | 10.74% | 9.27% | -1.47% | 8.64% | -2.11% | 10.49% | -0.25% | 7.02% | -3.72% |
| **1982** | 6.39% | -0.70% | -7.10% | -2.32% | -8.71% | -0.22% | -6.61% | -1.21% | -7.60% |
| **1983** | 3.32% | 0.43% | -2.89% | 3.43% | 0.11% | 3.45% | 0.13% | 4.22% | 0.91% |
| **1984** | 4.11% | 1.30% | -2.81% | -3.07% | -7.18% | 4.92% | 0.81% | 4.72% | 0.61% |
| **1985** | 3.18% | -0.10% | -3.27% | 1.58% | -1.60% | 3.19% | 0.01% | 1.75% | -1.43% |
| **1986** | 1.68% | 2.26% | 0.58% | 3.89% | 2.21% | 1.24% | -0.44% | 4.09% | 2.41% |
| **1987** | 3.21% | 3.11% | -0.10% | 3.60% | 0.38% | -1.90% | -5.12% | 2.77% | -0.44% |
| **1988** | 3.56% | 4.22% | 0.66% | 6.05% | 2.49% | 3.88% | 0.32% | 1.40% | -2.16% |
| **1989** | 4.38% | 4.56% | 0.18% | 2.38% | -2.01% | -0.45% | -4.83% | 4.06% | -0.33% |
| **1990** | 5.27% | 2.85% | -2.42% | 7.53% | 2.26% | 0.40% | -4.87% | 1.53% | -3.74% |
| **1991** | 3.91% | 1.00% | -2.91% | -0.87% | -4.78% | -3.24% | -7.15% | -0.54% | -4.45% |
| **1992** | 2.71% | -5.96% | -8.67% | -2.19% | -4.90% | 1.54% | -1.17% | 0.66% | -2.05% |
| **1993** | 3.15% | 7.59% | 4.44% | -1.20% | -4.35% | 3.14% | -0.01% | 2.25% | -0.90% |
| **1994** | 2.77% | 11.17% | 8.40% | 2.49% | -0.28% | 4.04% | 1.27% | 2.00% | -0.77% |
| **1995** | 2.97% | 3.81% | 0.84% | 1.82% | -1.16% | 3.63% | 0.66% | 2.07% | -0.90% |
| **1996** | 3.09% | 2.27% | -0.81% | 0.95% | -2.14% | 4.81% | 1.72% | 1.94% | -1.15% |
| **1997** | 2.15% | 3.13% | 0.98% | 4.22% | 2.08% | 6.87% | 4.72% | 1.87% | -0.27% |
| **1998** | 1.27% | 2.76% | 1.48% | 1.80% | 0.52% | 4.61% | 3.33% | 4.14% | 2.87% |
| **1999** | 1.95% | 5.50% | 3.54% | 5.28% | 3.33% | 4.13% | 2.17% | 4.03% | 2.08% |
| **2000** | 3.21% | 7.92% | 4.71% | 5.50% | 2.29% | 3.08% | -0.13% | 7.92% | 4.71% |
| **2001** | 2.33% | 13.04% | 10.70% | 9.24% | 6.90% | 3.64% | 1.31% | 9.38% | 7.05% |
| **2002** | 1.29% | 7.16% | 5.87% | 5.62% | 4.34% | -5.04% | -6.32% | 3.60% | 2.31% |
| **MEAN 77-00** | 4.41% | 4.16% | -0.25% | 3.79% | -0.62% | 4.17% | -0.25% | 4.18% | -0.23% |
| **MEAN 77-02** | 4.21% | 4.62% | 0.41% | 4.07% | -0.14% | 3.79% | -0.42% | 4.36% | 0.15% |

# APPENDIX XI

## *Real Arithmetic Mean Returns (1977-2002)*

Real Arithmetic Mean Returns (1977-2002)

*Average CPI (1977-2002)* *4.38%*

| | *Waterfront* | *Water Access* | *Inland* |
|---|---|---|---|
| **Dade** | 1.02% | 0.62% | 0.37% |
| **Lee** | 0.06% | -0.20% | -0.53% |
| **Escambia** | 0.75% | -0.15% | -0.61% |
| **Volusia** | 0.61% | 0.32% | 0.06% |

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