# ADIRONDACK PARK ZONING: PROPERTY VALUES AND TAX BASES, 1963 - 1983


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# PREFACE

The Adirondack Park Agency Act contained provisions for the New York State Board of Equalization and Assessment to monitor changes in land values for the various categories of land use established. Pursuant to these provisions, the State Board issued the Adirondack Park Real Property Tax Base Study, Final Report in 1978. Funding was authorized by Chapter 50 of the Laws of 1985, for an additional study "of the effect of land use planning on property values in and adjacent to the Adirondack Park." This is a report of the results of that study.

Many of the data required for an historical analysis of land value markets are not systematically collected and maintained by the State Board. Consequently, part of the research project involved a contract for data gathering and analysis with the Rockefeller Institute of Government of the State University of New York. The research project was directed by Peter A. Wissel, State Division of Equalization and Assessment, with two other principal investigators: Drs. Donald J. Reeb, Department of Economics, and Roman B. Hedges, Department of Political Science, both of the State University of New York at Albany. Research assistance on the project was provided by an extensive field staff, with notable contributions from Marilyn Edelman, Alice Titus, Andrea DeLaurier, James Denn, Randall Coburn and Leigh Polk. Division of Equalization and Assessment staff providing assistance on the project included Daniel Curtin, Wilfred Pauquette, Marty Goldblatt, James Dombrowski and Paul Sardella. John Banta of the Adirondack Park Agency also supplied data for the research effort.

The study was done in conjunction with an Advisory Committee made up of persons having knowledge of the area's land markets. Meetings between the research principals and the Advisory Committee were held on June 25, 1985 at the Division of Equalization and Assessment offices in Albany; on September 5, 1985 at the Loon Lake Golf Club; and on March 14, 1986 at the Adirondack Park Agency headquarters in Ray Brook. Preliminary findings were circulated for the 1963-80 period in a report to the Advisory Committee dated July 1, 1986, and these preliminary findings were presented to the State Board on October 22, 1986. During 1987 the State Board completed its 1983 market value survey, and subsequent analysis has centered on the 1963-83 period published herein. Membership on the Advisory Committee has included:

Timothy L. Barnett, Adirondack Conservancy Committee
Michael Blyskal, Department of Environmental Conservation
Eugene J. Corsale, Director, Saratoga County Real Property Tax Services
Anthony N. D'Elia, Executive Director, Adirondack Park Local Govt. Review Board
Baird Edmonds, Solar Builder
Patrick Flood, International Paper Company
M. Leo Friedman, Friedman Realty Company
Harold Kilmartin, Adirondack Game and Land Management Association
Bernard L. Leblanc, Long Lake Board of Assessors
Jane Powers, Director, St. Lawrence County Real Property Tax Services
Lewis M. Provence, Director, Clinton County Real Property Tax Services
Joseph T. Rota, Chairman, Adirondack Park Local Government Review Board
F. Peter Simmons, Advisor, Adirondack Park Local Government Review Board
John Stock, Member, Adirondack Park Agency
Thomas Ulasewicz, Executive Director, Adirondack Park Agency

# EXECUTIVE SUMMARY

In 1973 the controversial Adirondack Park Land Use and Development Plan was enacted. The Plan imposed State zoning controls upon the privately owned lands within the blue line marking the Park's boundary, affecting some 3.2 million acres of land. Much of the controversy surrounding this State zoning of lands in the area can be phrased as two arguments about "costs":

1. Zoning restrictions increase development costs and thereby lower the value of, and demand for zoned land.

2. The lessened demand for zoned land will be reflected in slower growth for the tax bases of towns containing it.

This report examines each of these claims in turn. The test of the first claim includes an analysis of 4,300 sales of unimproved parcels during the period 1963-1983. The extension of this claim to the growth rates of area tax bases examines appreciation rates for both undeveloped and developed realty in 132 towns as measured by the State Board of Equalization and Assessment's market value surveys from 1963 to 1983.

Many of the statements of the Plan's opponents view the zoning controls as damaging to potential, rather than existing development. Other research on zoning has found that improvements in place at the time zoning is enacted benefit from the establishment of development controls. Hence, this research takes an intensive look at the market for unimproved parcels, where the effects of these potential costs would be most readily observed.

The value trend for unimproved parcels in the area over a twenty-one year period shows that the land on both sides of the Park's boundary reflected a common appreciation pattern for the first nine years (1963-1971), with "boom" and "bust" cycles more apparent inside the Park. At about the time that the Land Use and Development Plan was being discussed and passed by the

Legislature, the value of unimproved parcels inside the Park began to appreciate considerably faster than did similar land outside the Park. Later, the value of lands outside the Park caught up to the value levels attained by parcels in the Park, so that 1983 values outside are within a few dollars of those inside, as they were in 1963.

The only significant zoning-related differences found for unimproved parcels are a discount of -14.1% for parcels not meeting the minimum acreage for their zoning class and a premium of +22.3% for parcels in the Moderate Intensity zoning category.

Other significant aspects of the value of unimproved parcels in the overall explanatory model (parcels inside and outside the Park, 1963-83) include:

- a premium of +66% for parcels located on or near water;
- a discount of -20% for parcels inaccessible from improved roads;
- a discount of -10% for buyers from New York State;
- a discount of -16% for parcels proximate to State owned lands;
- a discount of -35% for parcels 3-4 hours from Albany;
- a discount of -40% for parcels over 4 hours from Albany;
- a discount of -22% for parcels located outside the Park; and
- discounts for locations within Fulton, Lewis and Oneida Counties.

The overall model accounts for 62.5% of the observed variation in prices, with indicators of price following an order of importance from parcel size, to time of sale, to location of parcel, to parcel and buyer characteristics, and finally to include zoning characteristics.

Comparing each of five zoning classes (defined on page 1) independently with parcels of similar sizes outside the Park yields the following conclusions;

- there are no significant differences between parcels zoned in the **Hamlet** category and similar parcels outside the Park;

- the only significant difference between **Moderate Intensity**-zoned parcels and comparables outside the Park is a discount of 28% for parcels zoned Moderate Intensity which do not meet minimum lot size conditions (1.28 acres);

- parcels zoned **Low Intensity** attract a premium when compared with similar sized parcels outside the Park (+38%) along with a discount for lots not containing the 3.2 acre minimum which brings the premium down to +3.4%;

- there are no significant differences between parcels inside the Park zoned **Rural Use** and comparably sized lots on the other side of the blue line; and

- the only significant difference for parcels zoned **Resource Management** and comparable lots outside the Park is when the test for significance is weakened (under those conditions, a discount of -10.1%).

Shifting the emphasis of the analysis away from individual parcels and toward the appreciation rates for towns in and near the Adirondack Park for the 1963-1983 period, we find that a greater proportion of the towns inside the Park experienced rapid growth (in excess of 11% per year) than did the other towns in the study. The single most noticeable aspect of the townwide tax base appreciation trends is that towns inside the Park are distinctly ahead of the other towns in the period immediately prior to the enactment of the Plan. Since 1973, the value appreciation trends of the three types of towns in the study — inside the Park, split by the blue line, and outside the Park — are virtually indistinguishable.

Appreciation trends for the 132 towns studied show the following components of measured effects:

- the most important group of variables in explaining appreciation trends are **national economic trends** of local significance, including the health of the recreation and forestry industries, and interest rates;

- The second most important aspect of appreciation trends are the factors grouped together to describe **development in place** at the start of each period, varying across towns and over time (e.g., the size of the tax base at the start of each period);

- the third most important component of appreciation trends as measured by market value surveys is the **physical characteristics** of the towns, including square miles, miles of roads, and miles of shoreline;

- the next most important aspect of appreciation rates includes **measurements of location,** including distance from Albany, the travel time saved by the construction of Interstate 87, and distinctions for the Counties of Essex, Franklin, St. Lawrence, Warren and Washington; and

- after all of these other factors have been taken into account, the research shows that **zoning-related characteristics** explained very little of the observed variation, including a positive effect for places with local zoning plans, a negative effect for places outside the Park, and negative effects for places with a considerable proportion of Rural Use and Resource Management zoning.

The overall model accounts for 71.7% of the observed variation in appreciation rates, very little of which is attributable to zoning distinctions. Even with these distinctions, the combination of counties and zoning finds only 19 of the 84 towns with Adirondack Park Agency zoning restrictions to have projected increases at a rate slower than places outside the Park.

Very important to the analysis is the separation of appreciation rates after 1973. Isolating this period, 1973-1983, **neither the inside/outside distinction, nor any of the APA zoning categories are significant predictors of different appreciation rates.** Since 1973, appreciation rates for all towns in the study follow a common pattern. During this time the economic trends are less important distinctions in explaining rates of value changes, while the development/demographic characteristics of the towns become more important.

Aside from splitting the period of analysis into "before" and "after" pictures, the towns were divided into "inside" and "outside" the Park groups. These separate analyses showed the observed appreciation trends to be better explained by the statistical model inside the Park.

There are two major findings in the research with respect to the timing of appreciation observed. First, the area inside the Park appears more volatile,

more sensitive to the "boom" and "bust" cycles in land markets. Sharper declines and advances in value are evident inside the Park when compared to similar lands outside its borders. Second, the measured appreciation in the value of unimproved parcels appears to have a "lag" from when similar effects are noticed for tax bases as a whole. This suggests that as developments in place become more valuable, the search for more land to develop intensifies, resulting in price implications for unimproved land.

**Overall, the search for zoning "costs" attributable to the enactment of the Adirondack Park Land Use and Development Plan does not produce substantial evidence that they exist.** For unimproved parcels in the area, those outside the Park eventually caught up with the earlier price increases noted for vacant lands within the Park. For townwide tax bases, the appreciation rates noted do not even show the towns outside the Park doing that much.

While markets such as the Adirondack land market may react to changes in the regulatory environment quickly, it may also take a while for such effects to be available for analysis. In that sense, most of the prior studies of the effects of Adirondack Park zoning did not capture precise results simply because they were not yet available. For the fifteen years since the Plan's enactment, ten are now available for research into the price and appreciation effects of the zoning controls. They provide a sound base for statements about putative "costs."

**The major finding of the report can be succinctly stated: the analysis of tax bases since 1973 showed no significant costs relating to zoning.** Since 1973, the town tax bases inside the Park cannot be statistically distinguished from those outside the blue line. The appreciation rates of the places in and near the Adirondack Park follow a common pattern. In the analysis of value trends for unimproved land, the parcels inside the Park are shown to be more volatile, rising faster during "boom" periods and dropping faster during a market "bust."

At about the time that the Adirondack Park Land Use and Development Plan was being discussed and passed by the Legislature, land inside the Park began a rapid growth in value. It has taken several years for lands outside of the Park's boundary to catch up. The net effects of zoning, for these unimproved parcels include a cost attached to lots not meeting the acreage minimum for their zoning category along with a premium attached to lands with the Moderate Intensity zoning class. The evidence marshalled in this report shows the Adirondack land market to be cyclical and to behave in conjunction with national economic forces of local significance. This has been true in the period from 1963 to 1983, and can be expected to continue.

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## Introduction

The Adirondack Park Agency Act, enacted as chapter 348 of the Laws of 1973, established a land use planning and development control program for privately owned realty in the Adirondack Park. The legislation also directed the New York State Board of Equalization and Assessment to conduct studies to monitor changes in land values for the various categories of land use designated by the Act, and the relationship of any changes to comparable areas outside the Park. The purpose of the studies was to "identify on a current and continuing basis any shifts in tax burdens resulting from changes in land use and development in the Adirondack Park region." Funding was authorized, by chapter 50 of the Laws of 1985, "for the study of the effect of land use planning on property values in and adjacent to the Adirondack Park." This report depicts the results of that study.

The 3.2 million acres of privately owned land within the "blue line" marking the Adirondack Park's boundary were classified into one of the following six zones by the "Adirondack Park Private Land Use and Development Plan" (1973):

1. **Hamlet:** no limit on development intensity;
2. **Moderate Intensity Use:** 500 principal buildings per square mile;
3. **Low Intensity Use:** 200 principal buildings per square mile;
4. **Rural Use:** 75 principal buildings per square mile;
5. **Resource Management:** 15 principal buildings per square mile; and
6. **Industrial Use:** residential use incompatible.

The primary focus in this report is on the relative changes in price for land in each of these six zones and in areas immediately proximate to the Adirondack Park.

At the time of the Plan's enactment, the major criteria used in placing areas of the Park into one or another of these six categories included physical characteristics of the land itself, such as slope, elevation, soil quality and drainage; characteristics of societal amenities, such as access from roads and utility networks and the presence of sewage treatment facilities; natural resource characteristics, such as proximity to rivers, scenic views, timber stands, and wetlands; and existing uses. Each zoning category limited future development and uses. The subdivision of the private lands into these six zoning categories produced approximately the following breakdown (Source, Adirondack Park Agency):

| ZONING CLASS | ACRES | PERCENT |
|---|---|---|
| Hamlet | 56,000 | 1.8 |
| Moderate Intensity | 103,000 | 3.3 |
| Low Intensity | 280,000 | 8.9 |
| Rural Use | 1,036,000 | 32.8 |
| Resource Management | 1,668,000 | 52.9 |
| Industrial | 13,000 | 0.4 |
| **Total** | **3,156,000** | **100.1** |

From its inception the Adirondack Land Use and Development Plan was highly controversial. Arguments forwarded by the critics of the Plan view the restrictions placed on property uses as "costs" to the owners. The implicit argument against the Plan contains two main parts. First, the Plan restricts the development potential of properties, thereby lowering the demand for them and their consequent price in the marketplace. Second, these lowered values will then produce a slower growth in the real property tax base for the municipalities and school districts involved. New York State has, in this view, imposed restrictions potentially costly to private owners of realty within the Adirondack Park and to taxing authorities whose jurisdictions encompass these lands.

Expressed in this fashion, the central research question becomes one of discovering whether price effects are evident from the zoning of privately owned Adirondack Park lands. If effects are discovered, they must be identified as positive or negative.

To answer this question concerning the price effects of zoning in the area, we must examine (a) the activity in the market for affected parcels, and (b) the subsequent growth rates of local tax bases. Since previous studies have indicated a higher growth rate in the value of developed parcels and since the opponents of the Land Use and Development Plan have focused on potential uses rather than existing ones, the research into market activity in the region has isolated undeveloped parcel sales for intensive scrutiny. Sales prices of unimproved parcels in the period from 1963 to 1983 are the basis for answering the questions concerning the marketplace. The related question concerning the overall tax bases of municipalities in the region expands the research into an overview of value appreciation rates for developed, as well as undeveloped parcels. Townwide market value surveys conducted by the State Board form the basis for answering these broader questions on the growth rates of real property tax bases.

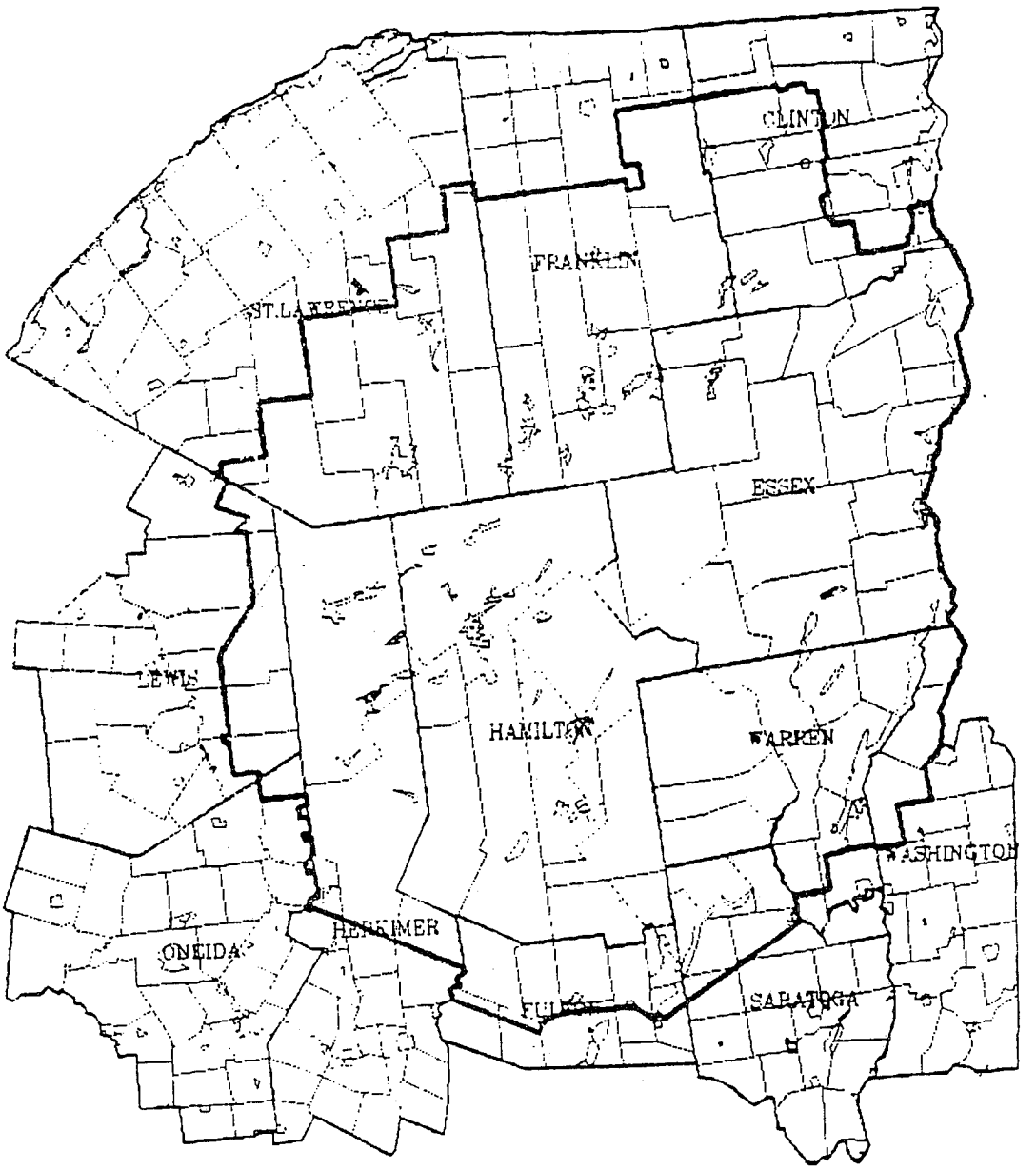
Once the growth rates of privately held Adirondack Park lands and the concommitant growth of real property tax bases in the area for the period since the imposition of zoning controls have been isolated, we must have a comparison standard against which to judge them. As an answer to the question "compared to what?" the areas immediately surrounding the Adirondack Park have been selected. In this manner the demand cycles can be analyzed for the region. It is unreasonable, say, to compare Adirondack Park lands to the changes in the market for realty in Manhattan, or Wyoming, or Boston. While realty markets follow certain national trends, there are also local forces at work shaping demands and therefore prices as well. If we view the boundary of the

Adirondack Park as an "arbitrary" line drawn on a map, separating somewhat similar properties on either side of it, the effects of State imposed zoning should become apparent where it exists on one side of the line and does not exist on the other.

The Adirondack Park (see Figure 1) encompasses all or part of the towns (townships) in twelve of New York State's counties. Altogether, these twelve counties hold a population of slightly less than a million persons in an area of almost 16,000 square miles. Towns tend to have less acreage in areas outside the Park, with slightly larger populations. The major population concentrations in the vicinity occur at the southeastern (Albany/Schenectady/Troy) and southwestern (Utica/Rome) corners of the Park. The Canadian city of Montreal is about an hour's drive from the northeastern part of the Park.

Real estate markets can be viewed as neighborhood phenomena. What is happening in the marketplace in one area may not reflect what is occurring in other parts of the same region. Even so, the closest approximations to a given market will be found in those areas having similar characteristics. And location is generally conceded to be the most important characteristic. If market influences spread from more urban areas into the surrounding countryside, we can expect the "ripples" of property appreciation to spread to neighboring communities at about the same time. A case study of a real estate marketplace such as the Adirondacks produces little more than a statement of observations unless we also develop a comparison standard. If we find, for example, appreciation in the range of 50% over a given period for an area being studied, we can place this result into focus if we also know that neighboring areas appreciated by 30%, or 90%, during the same period. If location is deemed the most important characteristic of the marketplace, the comparisons become weaker as we move further away from the market being analyzed.

Figure 1. Twelve Adirondack Area Counties with Park Boundary



## Selected Prior Studies

Zoning controls were enacted in 1973 by the State of New York for the 3.2 million acres of privately owned land in the Adirondack Park. Zoning controls are area-wide government regulations on private land uses, and were first put in place in 1916 in New York City, fifty-seven years before the Adirondack Park's Private Land Use and Development Plan was enacted. As recently as 1946 only about 1,600 of the more than 16,000 municipalities nationwide had implemented zoning controls. Now, nearly all large cities and suburban areas have zoning legislation.

Empirical studies of the effects of zoning controls on land values are of recent vintage. The first study was published in 1965 and fewer than a dozen studies are available in the literature. The published studies of urban zoning and land values have tended to be for shorter time periods and use less data to describe each site or area than the present study. Other than the studies of the Adirondack Park, there have been few published studies of the effects of zoning controls on land values for large, sparsely populated rural recreational areas.

The 1978 New York State Board of Equalization and Assessment Adirondack Park Real Property Tax Base Study, Final Report was the completion of a requirement in the 1973 Adirondack Park private land use legislation to monitor land values in the Park. The forty-three page Final Report focused on eleven counties (Oneida County was omitted) and omitted twenty-seven towns split by the Park's boundary. The market value of sixty-three towns entirely within the Park and ninety-seven towns wholly outside but proximate to the Park were compared for the years 1973 and 1974. The townwide market value survey dates were for January 1, 1973 and July 1, 1974, the latter being only eleven months after the August 1, 1973 enactment of the Adirondack Park Zoning Plan.

No discernable effect on market values was measured for the sixty-three towns in the Park in comparison with the ninety-seven towns outside but near the Park. Eleven months is a very brief period — insufficient time had elapsed to capture reflections of demand in the marketplace. The lack of sufficient time for the land markets to adjust to the Plan is not a problem that could have been ameliorated by the use of a more intensive methodology.

The Final Report and its earlier versions also discussed other data: the Fisher Act and forestry property values; the transitional assessment for State lands; revenues and expenditures of towns and school districts in the Park; and the assessment practices of the constituent towns. Data were also analyzed for real property transfers: inside the Park, outside the Park and for the Catskills (a mountainous area somewhat similar to the Adirondacks but much smaller in area and considerably closer to New York City). The latter analysis for 1971-1976 indicated a decline in property transfers after 1972 for all three areas. This was attributed to the oil scarcity and the 1974 recession. (The present study is able to relate national economic changes to townwide market values for a twenty-one year period.)

Also in 1978, the Academy for Contemporary Problems proposed an Adirondack Park Property and Municipal Impact Study, outlining a methodology for a study of the impact of zoning controls on property values in the Park. The proposed two-year study was the result of a New York State supported workshop held at the Lincoln Institute for Land Policy in Cambridge, Massachusetts. One of the authors of the present study was a workshop participant. The Academy's study proposal had three parts: personal interviews of property owners, studies of local government revenues and expenditures, and a statistical study of matched property sales. The Academy's proposal did not recognize that the

parcel location coordinates in most of the Adirondack counties are inadequate, thereby preventing a property's location to be readily aligned with the Plan's land use classification system. The years for which the property sales data were to be analyzed were 1968 to 1978, rather than the longer period covered in this report. And finally, the Academy's proposal focused on collaborative studies of assessment practices and placed little emphasis on the analysis of the effects of national economic changes on land prices in the Park. There are other differences between this study and the Academy's proposal, such as the Academy's suggestion to use the Catskills as a base for comparison, but such suggestions in a study plan are often revised as a study is pursued.

Also in 1978, David Vrooman's research, undertaken for his doctoral dissertation at the State University at Albany, was published in the American Journal of Economics and Sociology. The article, "An Empirical Analysis of Determinants of Land Values in the Adirondack Park," used a sample of 284 vacant land parcels and sales prices for 1971, 1972 and 1973. The focus was not to study the effects of the Plan, but to study other determinants of land value (e.g., size, slope, proximity to a paved road). His limited conclusions are largely complementary to the results found in the present study. However, he found that a vacant parcel adjacent to State owned land had a higher purchase price than a similar parcel not adjacent to State owned land, and vacant parcels zoned Moderate Intensity (1.28 acres per principal building, the lowest acreage required for a residence except for the Hamlet zone) tended to increase in price relative to other zoned parcels in the Plan. (Vrooman did not have Hamlet zoned parcels in his sample.) No water access variables were used in the analysis nor did Vrooman include any national economic variables, such as relative cost of transportation or interest costs. His other conclusions were that price per acre

increased about $5.35 each year, and the price of vacant parcels was increased by highway accessibility, buildability (lack of steep slopes), the occurrence of marketable timber on the site, the buyer being non-local, and for parcels located in Warren County (the location of Lake George). Exceptions to his findings, especially his linear yearly increase in price, are noted later. The major exception may be for parcels adjacent to State owned land. The present study finds State land proximity to be a negative influence on land price while Vrooman found that vacant parcels abutting State owned land had an increased price relative to identical parcels not abutted to State owned land. The results, though not contradictory, require an explanation.

In part, Vrooman's findings for the period 1971-1973 might be explained by the anticipation of increased market activity following the Environmental Quality Bond Act of 1972. The Bond Act set aside about $44 million for Forest Preserve acquisition in the Adirondacks. This report shows that a land market "boom" occurred in the area in the early 1970s. Some of this may have been fueled by speculative activity anticipating State purchases of lands near Forest Preserve holdings. If so, a short-term premium may have been placed on such lands and measured by Vrooman, where the same finding would not occur throughout if these transactions are placed into the longer-term perspective as is done in this report.

The present study uses, in part, data for sales between private individuals collected for the New York Power Authority (for power line sitings) and for the New York Department of Environmental Conservation (for State land purchases) and vacant land sales from inside and outside the Park. The Power Authority may well have attempted to keep its power line away from State owned land while the Environmental Conservation Department may have attempted to

purchase sites close to State owned land: considerably different motives. Other vacant land sales analyzed within the Park were measured to be proximate to State owned land if State owned land filled at least 20 percent of a circle with a radius of 1,000 meters from the site. All land sales outside the Park were presumed to be not proximate to State owned land, unless so noted. Records on proximity to State owned land are maintained by the Adirondack Park Agency only for land within the Park.

For these reasons, coupled with the expectation that the price influence of nearly everything decreases with distance, the short time period used by Vrooman, his failure to find a significant price decline for larger vacant land purchases (an effect that nearly all studies of rural land values found), and his failure to include a water proximity variable in his site variables may have caused his State land abuttment variable to be excessively large. Private land abutting State owned land may be more valuable, while private land a short distance away may be little influenced by State owned land but be influenced by the availability of recreational water (which may be on State owned land), highway access, and a host of other variables. Styles and preferences change: what was of greater value in 1971-73 may not draw higher prices throughout 1963-83, the years reviewed in the present study. And as is noted below, other measured price effects of proximity to State land are different yet from both Vrooman's and the present study.

Two other selected studies of Adirondack land values and zoning controls, by Robert Anderson and Roger Dower (1980) and David Kay (1985), generally follow the methodology suggested in the Academy's proposal and used by Vrooman and ourselves. This is fortunate: similar results from similar research programs, rather than identical results from identical research programs, is usually what determines "acceptable conclusions" among professionals. With

three similar studies, plus the research results described herein, some "acceptable conclusions" are possible. The Anderson and Dower American Journal of Agricultural Economics study for 1950-1976, "Land Price Impacts of the Adirondack Park Land Use and Development Plan," used a sample of 471 in Park sales (nearly 60 percent of which were in the Hamlet zoning category) and 45 out of Park sales (of land and buildings). Tax stamps on recorded sales were used to estimate market prices. David Kay used a mailed questionnaire returned by some 800 parcel owners in The Adirondack Land Market: The Land, Its Value, Its Buyers. The owners purchased Adirondack properties between 1968 and 1983; 293 of the parcels were near the Park. Again tax stamps on recorded sales were used to estimate market prices.

Even though Kay's research nearly doubled the number of parcels of the Anderson-Dower study (almost triple that of Vrooman's) they each had too few parcels to form conclusions in several meaningful categories. Thus, the present study uses not 300, 500, or 800 parcel transactions, but 4,300. The Kay and Anderson-Dower studies shared one conclusion: that the less restrictive property classes (like Hamlet) tended to have greater price appreciation than the other zoning classes. Because of small sample size, the Anderson-Dower conclusion is more intuitive than statistical. While the reported yearly price appreciation for Hamlet properties in 1973-75 is 19.0 percent vs. 10.7 percent for Moderate Intensity, 15.1 percent for Low Intensity, 2.8 percent for Rural Use and -3.7 percent for Resource Management, none of these are statistically different from zero. Though the sample sizes are not reported for each zoning class, it is reasonable to presume that the authors had too few parcels in each zoning class (relative to variation in price changes) to draw statistically meaningful conclusions.

Kay draws the same conclusion: less restrictively zoned properties had greater price appreciation. The measure was its obverse: the two zoning classes requiring the most acres per building had less price appreciation than the three zoning classes requiring the fewest acres per building. The combining of administratively disparate classes is artificial, and no one zoning class showed a significant difference in price appreciation. When coupled with a weakened statistical test (90 percent probability rather than the usual 95 percent) the conclusion becomes: it is likely but not conclusive that the less restrictive the zoning class the greater the price appreciation. The present study is able to draw much stronger conclusions.

Anderson-Dower and Kay shared another interest, that the unevenness of the national economy may be reflected in land price appreciation rates. Kay used three line graphs to relate land sales and land prices to gross national product, but statistically the relationship could not be measured by Kay (either for developed or vacant land, in the Park or outside the Park). Anderson-Dower display the unevenness in price appreciation (for vacant and developed combined, but in the Park and outside the Park separated). Few of the data are statistically meaningful — they have low probabilities of being distinguishable from one another. The Anderson-Dower data displays an interesting possibility: price appreciation in the Park occurred earlier than that outside the Park. While this conclusion cannot be safely made using the Anderson-Dower data, their conclusion was, once again, found to be valid on the basis of the more complete data analyzed in the present study. The present study also extends the data to 1983 from 1975. The price appreciation cycles for land in and out of the Park are, not surprisingly, found to be different.

Kay used several dozen variables to try to explain land price appreciation; for vacant parcels he found but a few statistically meaningful variables which increased the value of the site: size (acres), lake frontage, road/water and sewer/electricity accessibility and a lower per acre price for larger parcels. No statistically meaningful results were found for the Plan's zoning classes. For parcels near (within ten minutes walk) State forest land, Kay found no effect for completely undeveloped parcels, and a statistically meaningful effect for developed parcels.

The present study, the Kay and the Vrooman studies measured State land accessibility differently; the measured results, while different, are not equally valid. State land accessibility either has a price effect or it does not. The present study, with its more extensive data, is likely to be the more accurate. Though the effect of State land accessibility on sales prices of private parcels is a minor point, it needs to be re-examined at some time.

The similarities in the completed studies on Adirondack land values are greater than their differences. The overwhelming difference between the completed studies and the present study is in the number of parcels and the number of years analyzed. This provides a base from which a much larger number of conclusions are made. They include: (1) the effect of site, neighborhood and other characteristics on the price of vacant land; and (2) the effect of national economic variables on land prices inside the Park and near the Park.

Part of the debate concerning the Adirondack Park Agency's imposition of zoning controls in the region is avoided in all of the prior studies and in the current one: whether the State should be involved in the restriction of local land uses. David Kay alludes to this problem in shaping a perspective for his focus on economic activity (p.5):

> "Not surprisingly, both the APA and the Plan have elicited strong feelings of support and opposition since their inception. The right of the State to assume a planning role usually left to (often reluctant) local governments is at the heart of the controversy."

This question concerns the philosophy of government, or more strictly, the philosophy of the extent of government intervention in the regulation of uses for privately owned land. These are questions generally left to resolution by deliberative bodies, such as legislatures and the courts. In fact, a 1987 U.S. Supreme Court case (First Evangelical Lutheran Church of Glendale v. County of Los Angeles, California, decided June 9, 1987) describes certain kinds of zoning controls as "temporary regulatory takings" subject to compensation. This view makes the topic of zoning "costs" more important.

Even if no such costs can be found, the philosophical questions will not disappear soon. One of the present authors found, in a study of land use decisions in western Pennsylvania, that local government officials are not readily willing to share zoning laws or regulations on community open spaces with higher levels of government (The Use of Geological Information in the Greater Pittsburgh Area, January 1976). While certain kinds of environmental problem areas, such as strip mining legislation, flood plain development, water and air pollution, and transportation planning might be readily shifted to the federal, State, county, or special district levels, the regulation of zoning and open spaces in the community is not so easily shifted. Local officials wish to retain regulatory powers regarding zoning questions and open spaces within their community.

The present research can shed some light on questions of whether monetary costs are apparent since the 1973 adoption of the Adirondack Park Land Use and Development Plan. In restricting the focus of the report to this part of the

overall controversy, many other aspects of the Plan are set aside. Whether the State should be involved, and if so, to what extent, and using what forums for the expression of differing views, are matters left to political, rather than economic research arenas.

**Research Design**

Since the criticism of the Adirondack Park Land Use and Development Plan's effects has been divided into two types of potential costs (land price effects and tax base effects), the research into possible price effects of zoning controls follows two distinct paths.

In the first instance, individual parcel transactions between private landowners are traced historically through the period 1963 to 1983. The imposition of zoning controls does not cause the removal of non-conforming improvements currently in place. Therefore, if zoning raises the costs of development or reduces the value of vacant land, the price effects should be felt most strongly on the parcels subject to potential development.

The rationale for this claim can most readily be understood by considering the following example. A residence on a parcel of fifteen acres in a Resource Management zoned area is incorporated into the new zoning plan. A net effect of this acceptance of improvements in place at the time of the zoning enactment may be to make such existing buildings more valuable: zoning controls are thus viewed as a protection and enhancement of the "status quo" of developed parcels. The most rigorous test of the effects of such controls, then, is to test them against properties not developed at the time of the zoning enactment.

In the second instance, entire townwide tax bases are analyzed to test for differences in property value appreciation. The towns in the area are segregated into those wholly within the Park's boundaries, those split by the blue line, and

those entirely outside but near the Park. Because the State Board's measurement of each town's tax base is adjusted for the effects of new construction and other changes (e.g., the State purchase of Forest Preserve lands removes land value from the tax base as measured), appreciation measurement reflects the value change that occurs for a constant quantity of taxable real property throughout the period between survey measurements. This research path reflects an overview of tax base appreciation changes in the area, with a control group (outside the Park) and a before and after picture of the area affected by the zoning controls.

**Individual Undeveloped Parcels**

The most evident research problem is to obtain accurate data describing individual undeveloped parcels. This facet of the study cannot be emphasized too strongly, for about three-fourths of the overall effort included obtaining, reviewing, locating, comparing and attaching parcel characteristics for sales taking place up to 30 years ago. Some general rules were set out in gathering parcel transaction data to accomplish the purpose of the research project. A sufficient geographical spread was required across the Adirondack area, with a coverage both inside and outside the Park's boundaries. A coverage of the entire time period was desired, both before and after the enactment of the Adirondack Park Land Use and Development Plan in 1973. A variety of parcel sizes was desired, to deal with both small and large plots of land. For each of the sales transactions several characteristics were required: price, parcel size, parcel characteristics and location, zoning class, and the date of the transaction. Data from many zoning categories was required, and sales were to be "arm's length" — a willing buyer and a willing seller who are not related to one another. Transactions were checked to remove duplicate recordings of the same sale.

Our approach to this was twofold: secure records of transactions of property that have been verified for price and parcel characteristics, and trace current reported sales backwards to discover previous sales of the same parcels. The verified sales data were acquired from two large institutional sources, the sales histories were traced from recent sales reported in three counties: Clinton, St. Lawrence, and Saratoga. In both instances, only sales transactions between private parties for undeveloped land were compiled.

The verified sales were acquired from fee appraisals purchased by the New York Power Authority (NYPA) and by the Department of Environmental Conservation (DEC). Since an analysis of comparable sales is the primary means of establishing values for "subject" properties, fee appraisals acquired for prospective land purchases by these government entities will include verified transactions among private individuals to establish "comparability." The Power Authority was acquiring properties and easements along the western and northern boundaries of the Adirondack Park for two power line sitings in the mid-1970s. DEC was similarly purchasing lands in the Adirondacks throughout the study period. In both cases, private land sales prices were obtained by these organizations in order to offer a price commensurate with that established by the market.

Both NYPA and DEC made their data available, and the prices and parcel characteristics were recorded by the research staff. The NYPA data on private parcel transactions were in St. Lawrence, Lewis, Oneida, Franklin, and Clinton Counties, beginning with sales taking place in 1970 and extending into 1979. Characteristics of sales in eleven counties (none in Saratoga) were acquired from DEC, involving a large sample of parcels inside the Park, covering the 1960s through the early 1980s, with an emphasis on sales in the early 1970s (at the time of the Environmental Quality Bond Act). These verified sales transactions

produced close to 1,900 usable entries, about 500 from the NYPA source and another 1,400 from DEC. Fortunately, many parcel characteristics were also included by most of the fee appraisal firms, and a constant procedure was followed throughout in the data from NYPA, where all of the fee appraisals were obtained through a single firm.

The second approach was to obtain the sales reported to the State Board in three counties during the period 1979-1983, working backward in time to 1955 via county records to trace earlier transactions involving the same parcels. The three counties were selected because each of them had undergone a revaluation of real property in the recent past, at which time property location coordinates were recorded for each parcel. These coordinates allow additional information about each parcel to be tapped without the added cost of extensive site visits. The same type of data was not available in the other nine counties. Another major reason for the selection of Clinton, St. Lawrence and Saratoga Counties is that all three contain properties on both sides of the Park boundary. In general, less populated towns in or near the Park were selected in the three counties.

In Saratoga County the research project isolated seven towns in the northwestern part: Day, Edinburg and Hadley entirely inside the Park boundary, Corinth, Greenfield and Providence split by the blue line, and Galway, entirely outside the Park. In Clinton County, only the towns of Champlain, Plattsburgh, and Schuyler Falls, and the city of Plattsburgh were excluded from the data gathering, yielding three towns wholly inside the Park (Ausable, Black Brook, Dannemora), four split by the blue line (Altona, Ellenburg, Peru, Saranac), and another four entirely outside the Park (Beekmantown, Chazy, Clinton, Mooers). In St. Lawrence County data was collected and traced historically for the southeastern half of the County, generally omitting the area close to the St. Lawrence River. This emphasis traced sales in four towns outside the Park

(Edwards, Lawrence, Pierrepont, Russell), four split by the blue line (Colton, Hopkinton, Parishville, Pitcairn), and four wholly within the Park (Clare, Clifton, Fine, Piercefield).

The procedures involved in researching these recent sales were designed to discard any "suspicious" sales transactions. Starting from a base of about 3,400 reported sales in the recent past, the tracing of histories discarded transactions between individuals with the same surname, transactions without a valid transfer tax stamp or a suitable deed type, transactions apparently between corporate entities under the control of the same individuals, and transactions involving properties appearing to have improvements built upon them.

One difficulty in this process is that the transactions traced were "sales," while the entity of interest for research purposes was "parcels." Over time, parcels are split off or merged, so that the starting point for several smaller parcels may have been the same tract of land. Instances of this were tracked via parcel size and location characteristics, with duplications discarded. (A similar problem was encountered with the NYPA and DEC data, where the fee appraisers used the same verified sale to establish more than one "comparable". In these instances duplications were also discarded.)

The next filtering step in the process of establishing sales histories for the reported sales in the three counties was to attempt to use the reported parcel descriptions (section/block/lot) to check their locations on tax maps. Tax maps were secured from the three county tax director's offices, and parcels that could not be so located were discarded from the analysis. If located, certain parcel characteristics were recorded from the tax maps, including whether road access was present, proximity to water, and, if noted on the maps, proximity to State owned lands. Unfortunately, without site visits to each of the parcels,

characteristics such as slope, drainage, the presence of easements, and improvements such as access to power and telephone lines were not available.

Parcel transactions with apparently good "arms length," deed type, tax map location, and size characteristics were given an imputed price of the maximum covered under the dollar amount of the tax stamps contained on the county records. For most of the period, the prevailing tax stamp rate was $0.55 per $500 in sales price. A transaction between private parties at arms length for a sale of $700, with $1.10 in tax stamps, would be given an inferred price of $1,000. This tendency to overestimate prices by way of inferring them from the tax stamps can be taken into account in the analysis by "discounting" the imputed value. For the reported sales prices since 1979, no such correction is needed. For sales involving substantial dollar amounts, the inferred price from the tax stamps will not be too different (in percentage terms) from the actual price. Therefore, a correction for the inference of price from the tax stamp amount is only necessary at the lower range: for sales of $1,000 or less. The price data for vacant parcels, then, contain a mix of verified prices (from the fee appraisals), reported prices (from sales reports to the State Board), and inferred prices (from the county tax stamp records).

The final control on the parcels from the three counties involved using location coordinates and the Adirondack Park Agency's "acre resolution" mapping to discover the zoning class for each of those located within the blue line, as well as the presence or absence of lakes or rivers and State owned land. The parcel coordinates from the assessment rolls were used to locate each parcel, and a circle with a radius of 1,000 meters was computed around each located parcel inside the Park. If the circle contained more than 20% water or 20% State owned land, a "water influence" or "State land influence" indicator was derived.

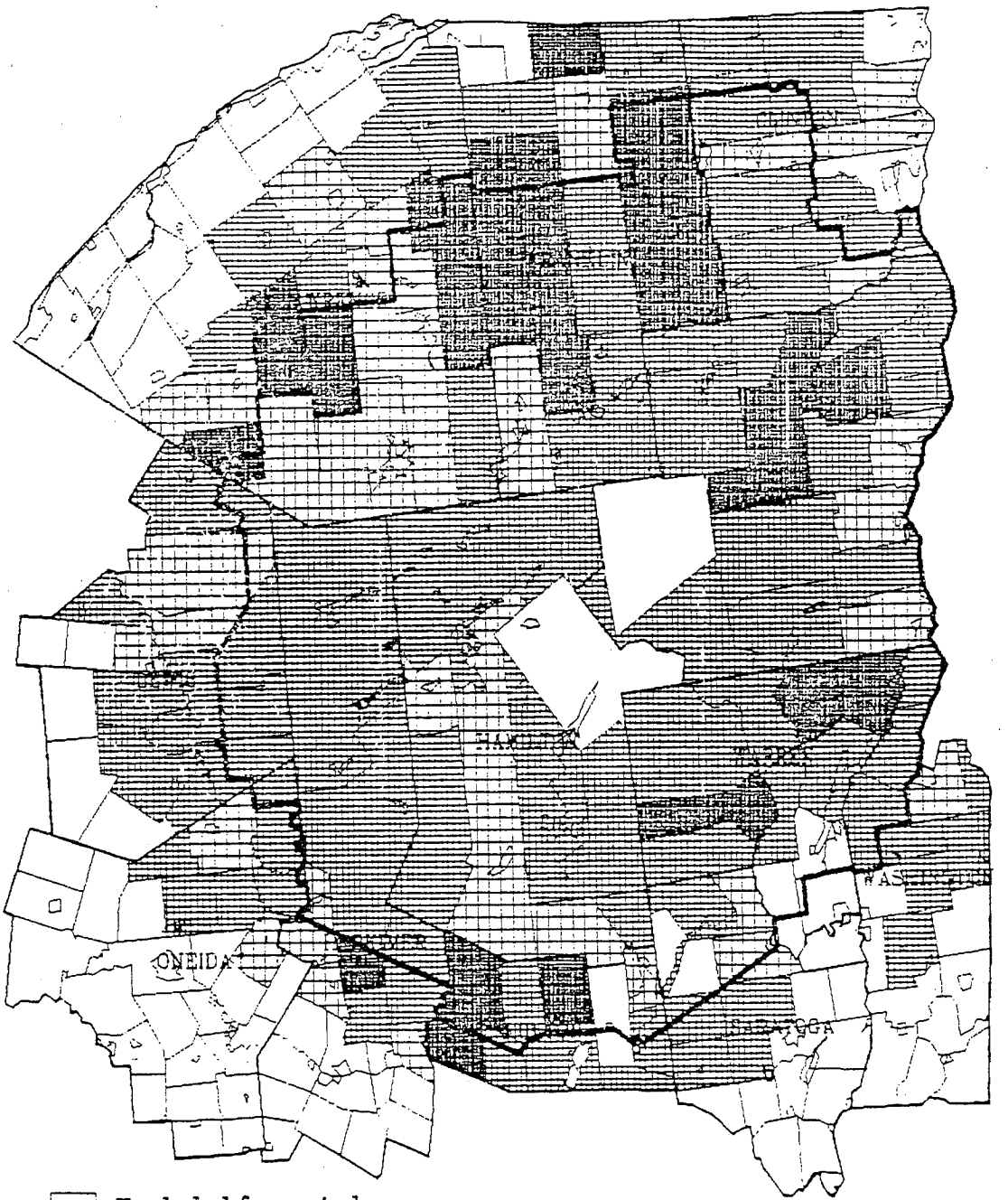
With this, many characteristics of the parcels and the "neighborhood" of their locations were recorded for those inside the blue line. Outside the Park, the major known quantity is the parcel's size, where this serves as a type of control: zoned parcels inside the Park with a known range of sizes can be compared to similarly sized parcels outside the Park.

### Townwide Tax Bases

The second part of the study shifts the unit of analysis from the individual parcel price over time to the appreciation rates of entire town tax bases. The towns immediately proximate to the Park have been selected as a comparison standard for those inside the blue line. Since there are no cities inside the Park, they have been eliminated from the comparison. Places more densely populated, or at a greater distance from the Park boundaries have also been removed from the set of municipalities chosen for comparison with Adirondack Park towns. Finally, places where data inconsistencies occurred during the study period have been removed from the analysis. The twelve counties which form the study area have 222 cities and towns within them. The process of reducing the set to those similar and proximate to the Park discards 90 of these from the analysis. The 132 towns analyzed in this report include 57 of the 61 within the Park's boundary, 27 of the 31 split by the blue line, and 48 of the 56 immediately proximate to the Park. The 132 towns shaded in Figure 2 show that the overwhelming majority of the area within and around the blue line has been retained for analysis.

These 132 towns contain over 7.6 million acres of land and water, or about 11,900 square miles, with an overall population of slightly over 300,000 persons. The population density of the towns inside the Park in 1973 was a little over 13 persons per square mile, for towns split by the blue line it was a little less than 24 people per square mile, and for the towns outside the Park the population density was slightly less than 59 persons per square mile.

Figure 2. Appreciation Rates for Towns Selected for Analysis (n=132)




Key:
- Excluded from study
- Annual Rate less than 8%
- Annual Rate 8-11%
- Annual Rate over 11%

Annual appreciation rates compounded over 20.5 years.

The total real property tax base for the selected towns wholly inside the Park was about $1.5 billion in 1973, for towns split by the blue line it was about $600 million, and for the towns outside the Park it was a little over a billion dollars. Further information about the characteristics of the three types of towns is given below in Table 1.

Table 1. Characteristics of Towns in Study: 1973 Estimates

| Characteristic: | Towns Inside Park (n=57) | Towns Split by Blue Line (n=27) | Towns Outside Park (n=48) | Combined Towns in Study (n=132) |
|---|---|---|---|---|
| 1. Average Acreage | 75,330 | 60,920 | 34,910 | 57,690 |
| 2. Average Population | 1,560 | 2,250 | 3,210 | 2,300 |
| 3. Average Housing Units | 850 | 920 | 1,040 | 930 |
| 4. Average Parcel Count | 1,320 | 1,450 | 1,240 | 1,320 |
| 5. Average Taxable Value ($m) | 25.6 | 21.8 | 21.4 | 23.3 |
| 6. Average Value/Acre | $443 | $436 | $656 | $519 |
| 7. Average Acres/Parcel | 57.2 | 42.1 | 28.2 | 43.8 |
| 8. Average Population/Sq. Mi. | 13.2 | 23.6 | 58.7 | 25.5 |
| 9. Towns with Villages | 13 | 10 | 25 | 48 |
| 10. Average Miles of Paved Road | 48.4 | 61.7 | 69.4 | 58.7 |
| 11. Total Percent Owned by State | 42.2 | 14.3 | 6.3 | 28.3 |

The overall picture presented in Table 1 is that the blue line delimiting the Adirondack Park from the surrounding countryside acts to separate the two areas. The amount of development present outside the Park, the 1973 dollar value per acre of land, shows it to be at a level about 50% higher than the area within the blue line. Population density in the towns within the Park is about one-fifth that of the towns outside the Park. Quite noticeable, also, is the

access to land in the two areas via paved roads. Inside the Park the figure translates to about four-tenths of a mile of paved road per square mile. In the towns outside the Park's boundaries there is about a mile and a quarter of paved road per square mile of area. In all cases, the towns split by the blue line present an intermediate step between the more developed, more populated area outside the Park and the less developed, less populated area within its borders.

The State Board of Equalization and Assessment periodically estimates the aggregated value of taxable properties in each of the State's towns and cities. The estimates have been made using an evolving methodology over the years, but are similar across towns within a market value survey. These aggregated estimates of taxable property value were made in 1983, 1980, 1978 and 1976 based solely on appraisals, with an effective valuation date of July 1 of the year of the estimate. Before that, survey estimates of value were based on both sales and appraisals, with the 1974 survey having a valuation date of July 1, and the 1973, 1970, 1968, 1965, and 1963 surveys having a valuation date of January 1.

From these ten measurements of the tax bases for each of the 132 towns in the study, we can draw out the changes taking place over a 20.5-year period: from January 1, 1963 to July 1, 1983. Halfway through the period the Plan was adopted establishing zoning controls within the Park. The time series of tax base estimates, aggregated at the town level, can be used to compare effects for entire towns on either side of the blue line. Towns split by the line are more difficult: the segregation of town growth into "Park" and "outside the Park" segments is not feasible.

Because the data from the State Board's market value surveys expresses an aggregated appreciation/depreciation of entire tax bases, these indicators of value were matched against several types of information about trends and

development circumstances during the period. With the supply of land constant over the period, we are inferring that the value attached to it will reflect demand. In effect, we are making judgments about the surrogates for demand in selecting variables to match against the observed value changes in these 132 townwide tax bases.

We have a moving panorama of demand for real estate in the area, combining the changes that take place in the market as related to widespread economic climates as well as shifts in the desirability of realty based on more local conditions. Since it is not possible to specify demand in a given area, a large number of indicators were built into the analysis to explain the observed value patterns. The inductive nature of our approach includes a number of factors which could be viewed as affecting demand. Major economic forces, such as prevailing interest rates, can be seen as having an impact on prices paid. Similarly, changes in population will affect the demand for housing. We wish to identify these forces so that we can factor them out of observed changes in the value of tax bases. The net effect of the model, then, will be to count zoning-related changes only after other, more critical aspects of demand are specified. We group these features of the times and the area into five major headings:

- **National economic trends:** certain indicators of national economic trends with possible effects on demand during the period, including the amount spent on recreational activities, the activity in the construction industry, the health of forest-related industries, interest rates and indicators of the cost of living.

- **Demographic and development characteristics:** statistics based on population, housing stock, and parcel counts including inferred rates of change, density measures, and the absolute size of the tax base at the beginning of each measurement period.

- **Physical characteristics of towns:** total area in square miles, miles of shoreline, paved and unpaved miles of road, and the area of larger bodies of water contained within town boundaries.

- **Location characteristics:** county each town is located within, to indicate a "neighborhood", distance from points outside the Park expressed in terms of the time necessary to reach each town, and time saved by the construction of Interstate 87 in the late 1960's.

- **Zoning characteristics:** whether other types of zoning are in place, aside from APA controls, the acreage and percent of the tax base for each of the APA zoning categories, and a three-way typology of towns — inside, outside, and split by the blue line.

These indicators were gleaned from census sources, Department of Transportation records, Adirondack Park Agency files, State Board of Equalization and Assessment materials, the Department of State, and publications citing the pertinent economic data for the years involved. Wherever possible, the indicators were trended to reflect both changes over time and changes among the towns being analyzed. Some items that vary marginally over time were assumed to be constant throughout the period (e.g., miles of paved road). Where information from the 1960, 1970 and 1980 censuses was incorporated, straight line trends between censuses were imputed for each town. For example, the 1973 population estimates shown in Table 1 were imputed from the 1970 and 1980 census data.

Often, the data could be manipulated so as to produce a surrogate indicator for a phenomenon not otherwise measured. An example of this is the "second home" aspect of recreational development in the Park region. Good counts of second homes do not exist, but from the censuses the count of population is available, as well as the count of housing units. Dividing the population by the number of housing units, we obtain the average number of people per housing unit. At the lower end of this scale we might infer that a considerable number of second homes are present, at the upper end (a greater number of persons per housing unit) we infer fewer of them.

Another example is the amount of travel time "saved" by the construction of the Interstate 87 corridor. In this respect, improved access to the area is expected to increase demand, and thereby increase value. The Department of Transportation provided the travel time, in minutes traveling at the maximum speed limit, from a point in Albany to a point in each of the 132 towns in the study. This was done both using the I-87 route and excluding it. Subtracting the two numbers yields the minutes saved via the use of this route. Using the Albany location as a base can be seen as a substitute for access from other population centers, such as New York City and Boston, where the direct motor route to the Adirondacks would pass through Albany.

A final adjustment to the data concerns the nature of the market value surveys conducted by the State Board. Each inter-survey period, taken by itself, contains some margin of error. This is due to two major aspects of the measurement of tax bases; the items listed on the assessment rolls, and sampling error. The rolls for the many assessing units in New York State come in a variety of conditions, from full-value rolls with properties accurately classified, to rolls at miniscule fractions of value where the recorded property use has not been changed for years. If property is misclassified it is difficult to sample accurately (a larger number of properties need to be included to obtain a certain level of accuracy) and the computed full value may be subject to more error if the assessed properties are at varying fractions within a single roll.

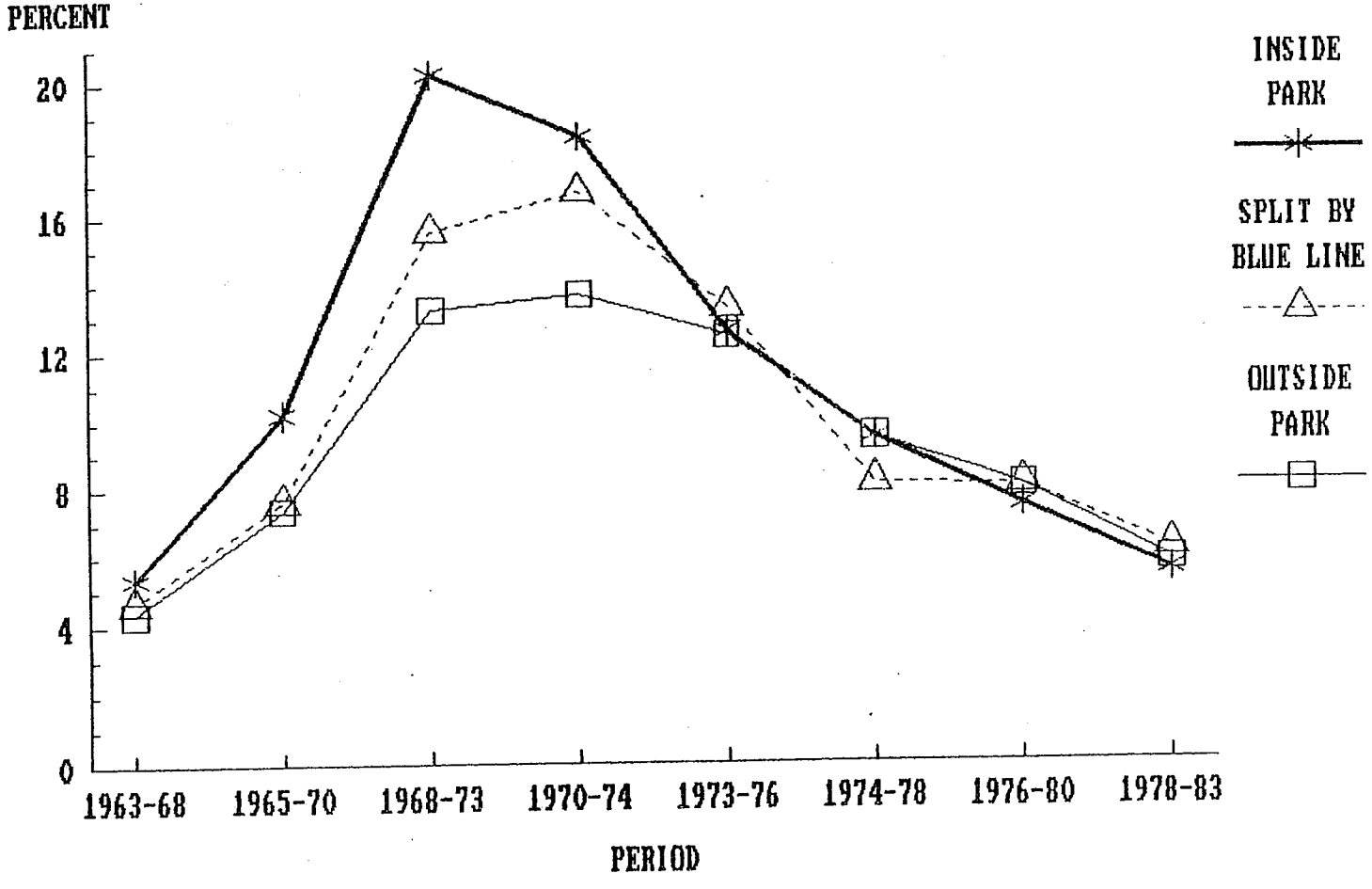
Recent measurements of assessment uniformity in the State have consistently shown that some of the worst assessing practices in New York occur within the study area. Sampling error also comes into the picture when the full value estimates are viewed over time. The methods used to compute full value have changed since 1963, where the number of property classes sampled has

changed and the method of obtaining individual property valuations has shifted from a sales base to one of appraisals. All of these factors serve to confound inferences based on the full value estimates of town tax bases.

To control for those fluctuations over time, the data have been combined into periods of two SBEA surveys, calculating an average annual appreciation rate over the combined period. Figure 3 shows the trends for each of the combined market survey periods. The first period, where all three types of towns show an annual appreciation rate of about four percent per year, smooths the market value survey data between 1963 and 1968. The second period similarly smooths the trends between 1965 and 1970, and subsequent periods are treated the same. In this manner the periodic observations of property tax bases on the part of the State Board can be viewed with greater confidence: survey-to-survey "corrections" of prior estimation errors do not distort the overall picture of value changes as much.

Figure 3 depicts the annual appreciation rates for the three areas as separated in this report: the area composed of towns entirely within the blue line, the area composed of towns split by the Park boundary, and the area of towns entirely outside the Park. In the early part of the study period, there is a substantial difference among them, with the area inside the Adirondack Park appreciating at a faster rate. The peak of this appreciation curve is during the 1968-1973 period, immediately prior to the adoption of zoning controls. The area composed of towns split by the Park boundary appreciated at a rate between the rates for towns located on either side of the blue line, and the towns outside the Park showed the least appreciation. In the period since the zoning controls were imposed, the three areas are virtually indistinguishable, where the only difference of as much as one percent between the highest and lowest is the slight dip shown for towns split by the blue line during the 1974-1978 period.

# FIGURE 3. ADIRONDACK AREA ANNUAL APPRECIATION RATES FOR COMBINED TWO-SURVEY PERIODS 1963 - 1983




S.B.E.A. periodic market surveys of towns in the 12-county Adirondack area combined into three groups to display overall appreciation by type.

Figure 3 shows the three areas to be starting and ending in tandem with one another, with a deviation in the period immediately prior to 1973 for the towns inside the Park. Several indicators might produce this result, including the activity of the State in acquiring land (the activity surrounding the Environmental Quality Bond Act of 1972), activity in the (national) second home market, the health of the forestry and recreational industries, and so on. Whatever the indicators of appreciation we can tie to these overall growth rates, the cycles of appreciation in the area are evident. In the period five to ten years before the Park zoning was enacted, appreciation was around the five percent per year level. After a growth period where the three areas are distinguishable, the cycle slowed down to about five percent per year again for the 1978-1983 measurements.

**Undeveloped Parcels: Results**

The basic underlying assumption of our analysis, supported by observations in prior research on land sales, is that the relationship between the acreage of parcels sold and the price paid per acre is not linear — smaller parcels command a larger price per acre. We express this assumption about the prices of parcels and their sizes as a "double logarithmic" model.

While a "double logarithmic" model sounds forbidding, it has two major advantages once the results are converted back into expected prices. First, it enables the model to properly reflect the general fact that price per acre declines as acreage increases. Secondly, the double logarithmic model enables us to present our results in terms of a simple multiplicative result. For example, parcels near water sell for 66% more than similar parcels away from the water.

For our analysis, several kinds of variables are "fit" into the prediction of price. The starting point, in each instance, is the size of the parcel. Beyond that, we have information concerning each sale to make the following kinds of adjustments:

- **Time adjustments:** In the analysis we are dealing with 4,300 sales transactions in twelve counties over a twenty-one year period. We have aggregated the sales into three-year intervals, somewhat similar to the number of observations made in our overview of the tax bases from S.B.E.A. market surveys, in order to smooth the data into time periods. For the twenty-one years, the 1972-1974 period is the "base" of the analysis, with sales in prior periods as well as sales since the enactment of the APA zoning controls measured as deviations from the base.

- **Location adjustments:** Since markets are best viewed as somewhat local (larger or smaller neighborhoods), we can adjust for these characteristics by noting the county within which each transaction occurred. If significant differences are present across these regional distinctions, the model will pick them out as (positive or negative) multipliers. Another distinction made in the model traces the distance from a point in Albany to a point within each of the towns. Expressed in hours, this measure allows us to capture different prices observed at greater distances from the major population center in the region.

- **Parcel and buyer characteristics:** Unfortunately, we were unable to attach many characteristics of each parcel in a comprehensive fashion. While it would improve our "fit" of parcel size to price to know whether marketable timber is present, whether the slope of the land makes building difficult, or whether the value is affected by scenic views, poor drainage, or the presence of easements. This information was not always available. Some indicators used include: proximity to recreational water, road access, proximity to State owned land, and whether the buyer was local (from New York State).

- **Zoning adjustments:** The crux of the test for the effects of zoning controls includes the APA zoning category for parcel sales after 1973, where each of the five categories (no industrial zoning was captured in the data) was entered into the model. In addition, a distinction was added for parcels outside the Park boundary, along with parcels in a zoning class that do not meet the minimum size delimited by the classification (e.g., parcels zoned as resource management with less than 42.67 acres).

The combination of factors which may have an influence on the prices paid for land within this "market" is important in order to understand the impact of zoning on prices. In effect, the model is incorporating aspects of the parcels found to be significant predictors of price, which then allows the isolation of Adirondack Park Land Use and Development Plan indicators. After differences in acreage, location, parcel and buyer characteristics, time of the transaction, etc., have been taken into account the effects of the zoning can be ascertained.

The basic set of 4,300 sales are presented in Table 2 according to the time when the transaction took place and the location on either side of the Park boundary. The data depart slightly from an even split between those within the Park and those outside it. More noticeably, the data contain more recent sales than from the more distant past. About nine hundred sales are analyzed for the period from 1963 to 1971, while over 2,500 are studied for the period between 1975 and 1983. Since we wish to test for effects since the 1973 enactment of zoning controls, this fact enhances our ability to discover whether "costs" were involved.

Table 2. Time and Location of Sales Transactions Analyzed

| Period: | Within Park | Outside Park | Total Sales | Percent |
|---|---|---|---|---|
| 1963-1965 | 130 | 108 | 238 | 5.5% |
| 1966-1968 | 126 | 79 | 215 | 5.0% |
| 1969-1971 | 239 | 197 | 436 | 10.1% |
| 1972-1974 | 399 | 498 | 897 | 20.9% |
| 1975-1977 | 262 | 473 | 735 | 17.1% |
| 1978-1980 | 340 | 397 | 737 | 17.1% |
| 1981-1983 | 499 | 543 | 1,042 | 24.2% |
| TOTALS | 2,005 | 2,295 | 4,300 | |

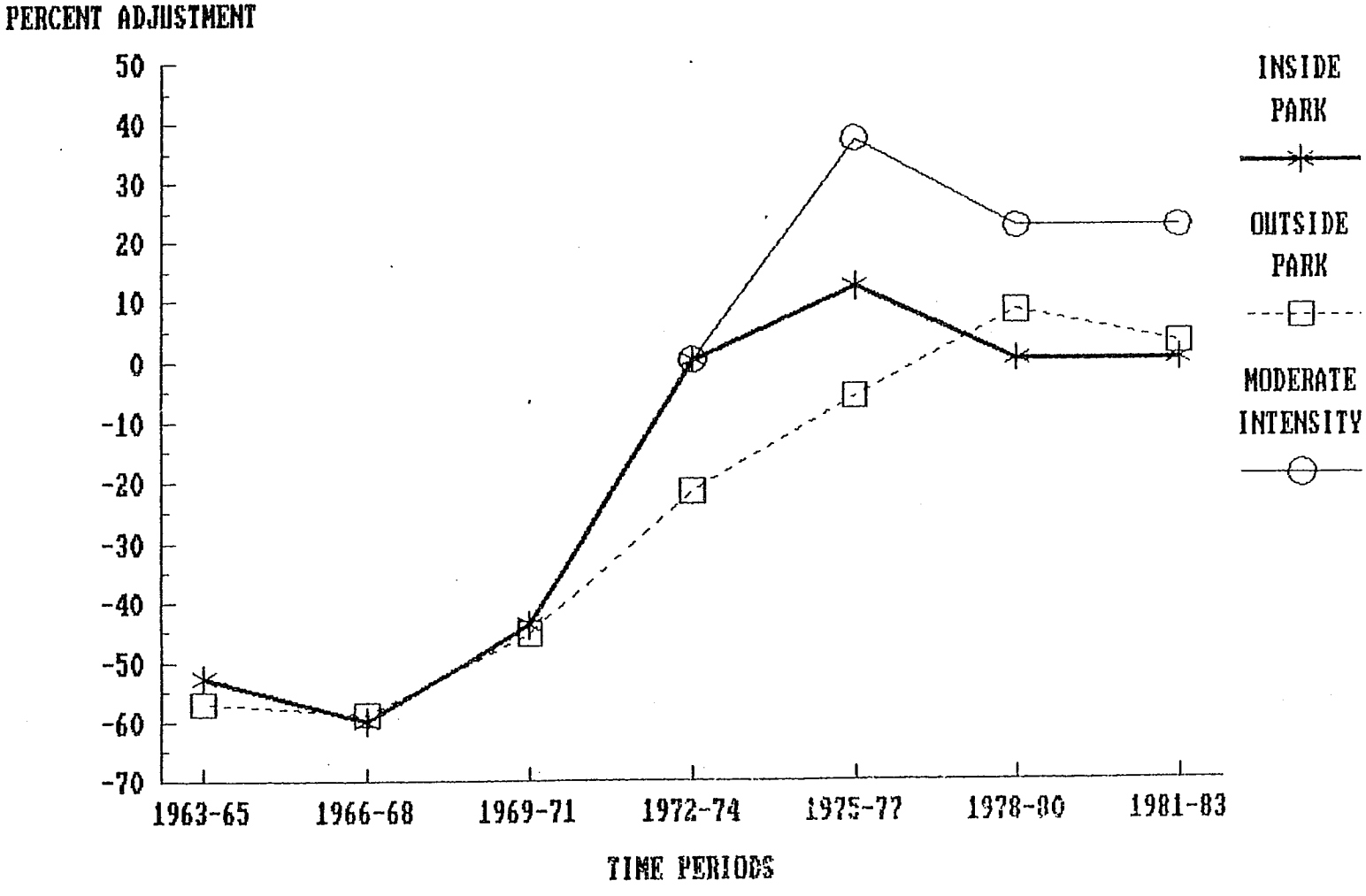
Due to the nature of the data resources tapped in constructing our set for analysis purposes, the sales transactions are not uniform across the twelve counties. Almost two-thirds of our observations are from the three counties, Clinton, St. Lawrence and Saratoga, where sales histories were reconstructed from the county records. Even so, the records allow for distinctions in most counties for sales on either side of the blue line (with the notable exceptions of Essex and Hamilton, where the entire counties are inside the Park, and Oneida, where only one recorded sale was in the Park). Table 3 shows the location of the 4,300 sales by county and by location on either side of the Park boundary, both after the enactment of zoning controls and overall.

**Table 3. Property Sales by County, After 1973 and Total**

| County: | After 1973 | | | 1963 - 1983 | | |
|---|---|---|---|---|---|---|
| | Within | Outside | Total | Within | Outside | Total |
| Clinton | 401 | 781 | 1,182 | 569 | 1,030 | 1,599 |
| Essex | 155 | 0 | 155 | 376 | 0 | 376 |
| Franklin | 97 | 73 | 170 | 156 | 89 | 245 |
| Fulton | 30 | 0 | 30 | 43 | 11 | 54 |
| Hamilton | 106 | 0 | 106 | 187 | 0 | 187 |
| Herkimer | 22 | 9 | 31 | 48 | 11 | 59 |
| Lewis | 11 | 134 | 145 | 21 | 189 | 210 |
| Oneida | 0 | 57 | 57 | 1 | 83 | 84 |
| St. Lawrence | 135 | 359 | 494 | 199 | 507 | 706 |
| Saratoga | 137 | 199 | 336 | 210 | 314 | 524 |
| Warren | 97 | 8 | 105 | 184 | 35 | 219 |
| Washington | 5 | 19 | 24 | 11 | 26 | 37 |
| **TOTALS** | **1,196** | **1,639** | **2,835** | **2,005** | **2,295** | **4,300** |

Figure 4 shows the appreciation curves of unimproved Adirondack area parcel prices for the period 1963-1983. These lines are the "general case" for parcels inside and outside the Park's border, along with a "special case" of land zoned in the Moderate Intensity category since the zoning controls were adopted in 1973. None of the other zoning categories differed significantly from the general case for parcels inside the Park. In Figure 4 we find that the prices paid for parcels in the area moved in tandem from 1963 to 1971. When we arrive at our "base period," 1972 to 1974, a significant departure occurs, with land inside the Park bringing a premium price when compared with similar parcels around the Park's borders. A further departure, with higher prices paid for land in the Moderate Intensity zoning areas, occurs in the three-year period immediately after the zoning plan was implemented. Shortly thereafter, a period occurred where parcels outside the Park caught up to those inside, during 1978-80. Finally, in the most recent period in the study, 1981-83, the general inside vs. outside comparison shows prices to be very similar, excepting the premium paid for Moderate Intensity lots.

# FIGURE 4. UNIMPROVED ADIRONDACK PARCEL PRICES: TIME ADJUSTMENTS, 1963-1983




Time intervals grouped into three-year periods with 1972-1974 used as the base for adjustments.

This illustration of the general case of prices over time in the area omits some additional distinctions discovered by our model (see Table A.1). These include:

**Parcel and buyer characteristics:**

| | |
|---|---|
| Water proximity | +66.2% |
| No road access | -20.0% |
| State land proximity | -16.0% |
| Discount for N.Y.S. buyer | -9.6% |

**Location adjustments:**

| | |
|---|---|
| Fulton County location | -29.4% |
| Lewis County location | -51.0% |
| Oneida County location | -24.0% |
| 3 to 4 hours from Albany | -34.6% |
| Over 4 hours from Albany | -39.6% |

**Zoning adjustments:**

| | |
|---|---|
| Parcels outside Park | -21.8% |
| Moderate Intensity zone | +22.3% |
| Less than acreage minimum | -14.1% |

The "zoning adjustment" which takes into account the differences between the general case and parcels outside the Park is built into Figure 4. Other adjustments to the price have been omitted. For example, we can show, in Figure 5, the adjustments occurring when we calculate prices for Moderate Intensity parcels smaller than 1.28 acres (bringing in the -14.1% adjustment shown for parcels less than the minimum size in the zoning categories).

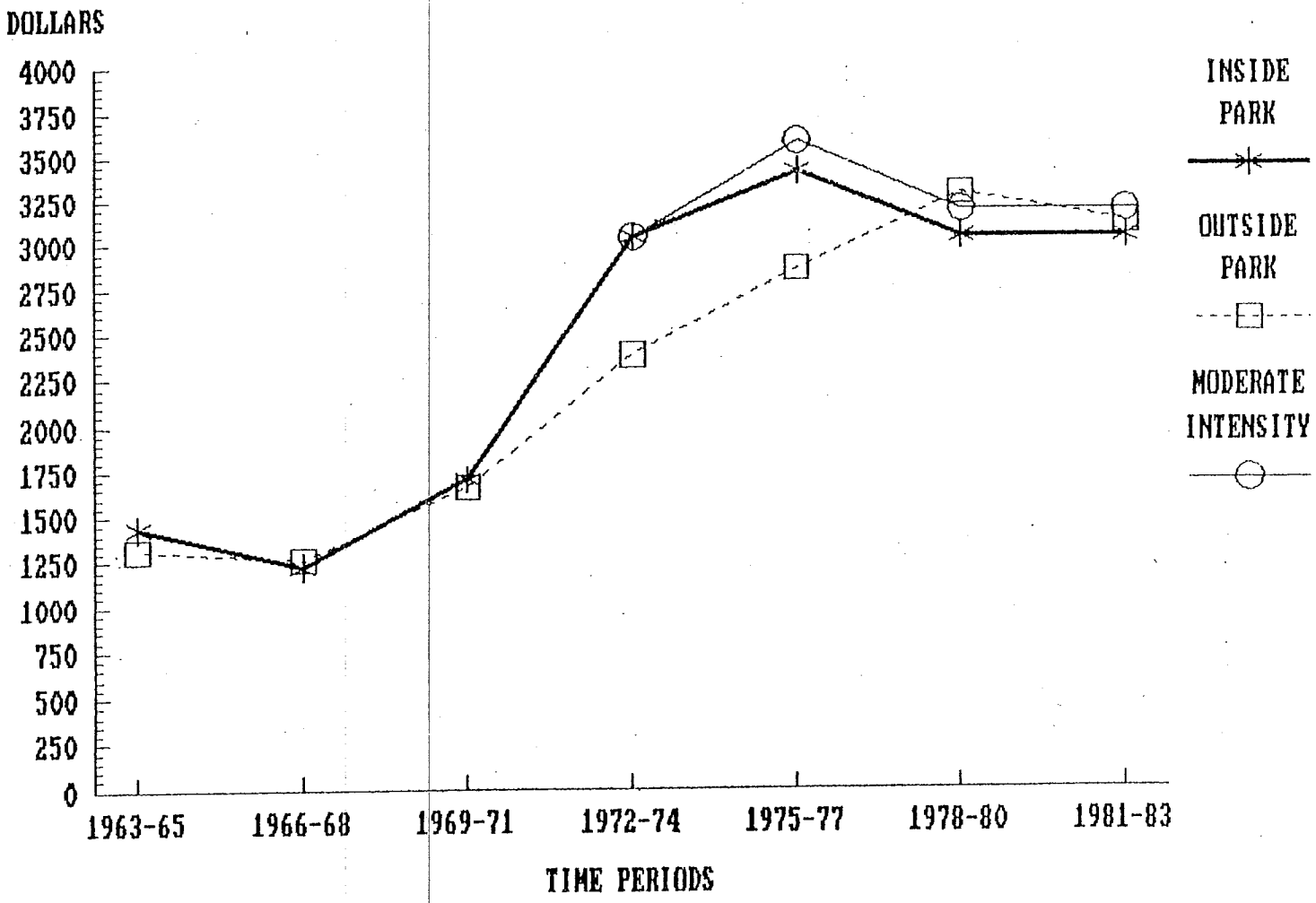
Figure 5 shows the predicted price for a one-acre parcel of land under three circumstances: outside the Park; inside the Park (but not zoned Moderate Intensity); and inside the Park, zoned Moderate Intensity, but less than the 1.28 acre minimum for the zoning class. These expected prices are shown by time period as follows:

| Time Period: | Inside Park | Outside Park | Moderate Intensity |
|---|---|---|---|
| 1963-65 | $ 1,435 | $ 1,307 | ... |
| 1966-68 | 1,217 | 1,253 | ... |
| 1969-71 | 1,696 | 1,652 | ... |
| 1972-74 | 3,035 | 2,372 | ... |
| 1975-77 | 3,404 | 2,849 | $3,574 |
| 1978-80 | 3,035 | 3,278 | 3,186 |
| 1981-83 | 3,035 | 3,114 | 3,186 |

One of the major observations concerning these predicted prices is that the effects of price declines are more noticeable inside the Park. During the period in the mid-1960s when prices tumbled, the impact was felt to a greater extent inside the Park. Between 1963-65 and 1966-68, prices fell by more than 15% inside the Park. During the same period they fell by only four percent outside the Park's boundary. Later on, the decline inside the Park from the 1975-77 peak of $3,400 was on the order of almost 11%. The observed decline outside the Park from the 1978-80 peak was only five percent.

What this illustrates is that the effects of "boom and bust" cycles strike the two areas at somewhat different rates, sometimes simultaneously with one another and at other times with slight lags evident. Overall, Figure 5 shows us prices moving in tandem up to the period during which the zoning controls were adopted, separating for a period with the land inside the Park becoming more valuable over the short term, then joining back together to move in tandem once again during the most recent period measured. The 1981-83 period shows land outside the Park to be slightly more valuable for a one-acre parcel than land inside, where the land inside in the Moderate Intensity zoning category is slightly more valuable yet. The three cases are within $150 of one another in this picture of the "average" sale.

# FIGURE 5. PREDICTED PRICE OF ONE-ACRE PARCEL: ADIRONDACK PARK AREA, 1963-1983




Time intervals grouped into three-year periods with 1972-1974 used as the base for adjustments.

Table 4. Expected Prices for Unimproved Ten and One Hundred Acre Lots

| Time Period: | Inside Park | Outside Park | Moderate Intensity |
|---|---|---|---|
| **Ten Acre Parcel** | | | |
| 1963-65 | $ 3,722 | $ 3,390 | ... |
| 1966-68 | 3,157 | 3,250 | ... |
| 1969-71 | 4,399 | 4,285 | ... |
| 1972-74 | 7,871 | 6,153 | ... |
| 1975-77 | 8,829* | 7,391 | $10,794 |
| 1978-80 | 7,871* | 8,502 | 9,623 |
| 1981-83 | 7,871* | 8,078 | 9,623 |
| **One Hundred Acre Parcel** | | | |
| 1963-65 | $ 9,653 | $ 8,792 | ... |
| 1966-68 | 8,190 | 8,429 | ... |
| 1969-71 | 11,411 | 11,115 | ... |
| 1972-74 | 20,417 | 15,961 | ... |
| 1975-77 | 22,902 | 19,171 | $27,999 |
| 1978-80 | 20,417 | 22,054 | 24,961 |
| 1981-83 | 20,417 | 20,953 | 24,961 |

*: For Resource Management zoning, a ten-acre parcel would not meet the minimum acreage. In this case the expected prices would be: $7,584 for 1976-77, and $6,761 for the later two periods.

These examples of prices derived from our double log model can be worked out for any parcel size and for any configuration of location or parcel characteristics found to be significant. For example, Table 4 displays the expected prices for ten and one hundred acre unimproved parcels. To calculate the price paid by a buyer from New York State, for example, multiply the listed price by .904 (the expression of a 9.6% discount). If the parcel is located on

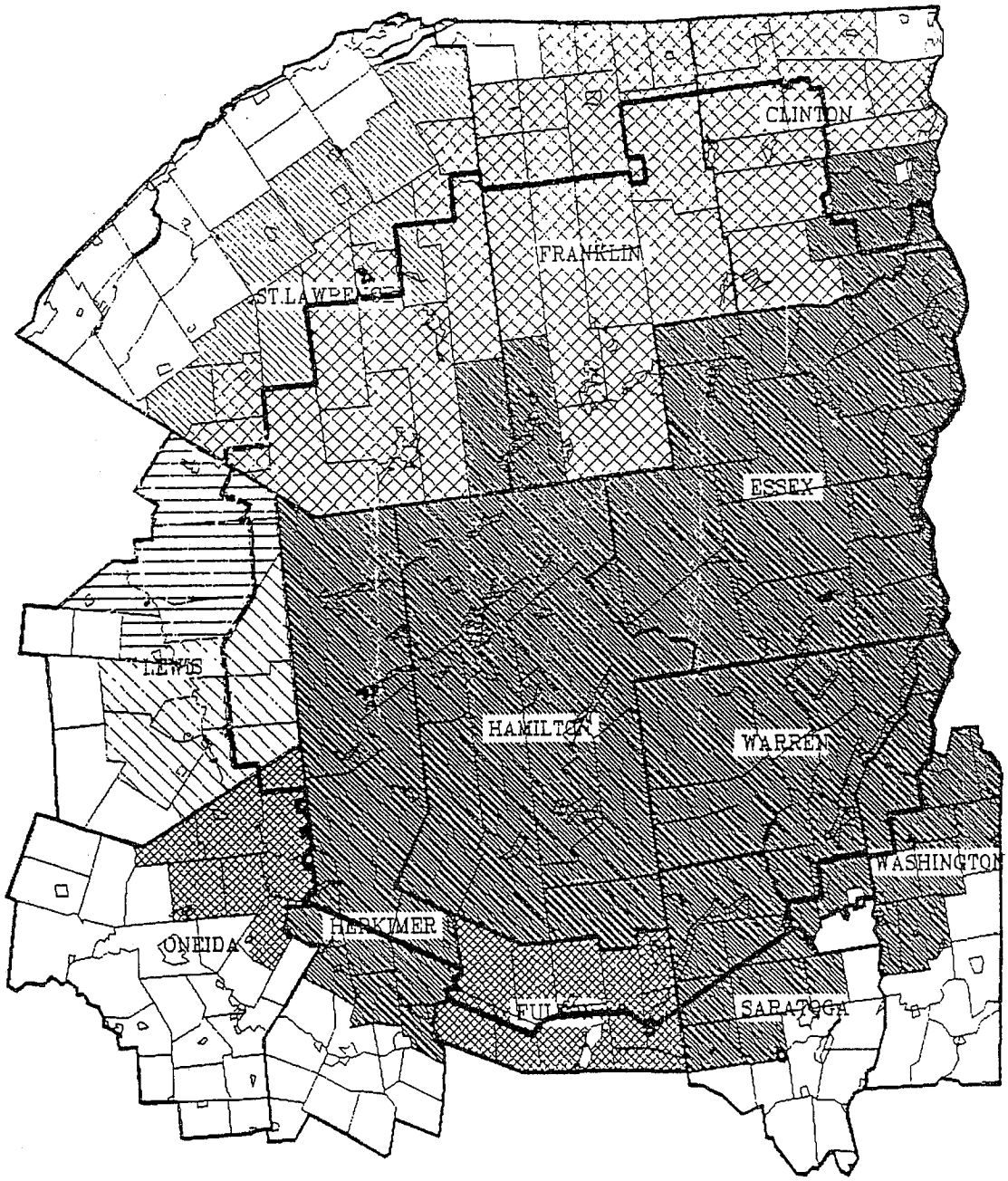
water, multiply by 1.662, which shows such unimproved land to be more valuable by two-thirds.

Figure 6 depicts the adjustments made throughout the study area for different geographical regions. After taking into account all of the other factors listed (on p. 35), we find land values discounted in three counties and in two "bands" of distance from Albany. The general case, including most of the area closest to Albany, is not differentiated by the model. Land in Oneida County near the Park is discounted by 24%, while land in Fulton County receives a 29.4% discount from the average.

Lewis County is split into two parts. The area in the southern part of the County, closer to Albany, is about half as valuable as the usual case (discount of 51%). In the northern part of the County, where the additional influence of being more than three hours from Albany enters into the equation, the compounded discount of the two factors (.49 times .654) shows a discount of -68%. Land values in this part of the study area are about one-third as high as the general case.

St. Lawrence County is another case split by the distance from Albany. For the part of the County less than three hours from Albany (the town of Piercefield, in the southeastern corner), there is no discount from the norm. A band of towns in the County from three to four hours from Albany are discounted by 34.6%, and the parts of the County in the study most distant from Albany (in excess of four hours) receive a discount of 39.6%. In sum, the parts of St. Lawrence County inside the Park are more valuable than the part in the study area outside the blue line.

Figure 6. Location Gradients of Expected Prices for Land




Key:

| | |
|---|---|
| single shade: | area-wide "norm" (100%) |
| narrow cross-hatch: | Fulton (-29.4%) and Oneida (-24%) Counties |
| wide cross-hatch: | distance of 3-4 hours from Albany (-34.6%) |
| narrow diagonal: | distance of over 4 hours from Albany (-39.6%) |
| wide diagonal: | Lewis County (-51%) |
| horizontal: | Lewis County, 3-4 hours from Albany (-68%) |

Most notably, in Figure 6, those places not discounted by either a county difference or by the distance from Albany include Saratoga, Warren, and Washington Counties, with the "urban" influence of the Albany/Schenectady/Troy region, as well as the two counties entirely inside the Park: Essex and Hamilton. Most of Clinton and Franklin Counties are discounted in terms of distance from Albany, while that part of Herkimer County within the study does not show any difference from the norm.

A set of comparisons were made distinguishing each of the five zoning categories for which we have data (Industrial Use excepted) from comparably sized parcels outside the Park after 1973. This was done to test each of the categories of APA-zoned land from parcels of similar size. The general form of the test was to take parcels in the range from twenty percent of the minimum required acreage for a principal building to ten times the minimum. The number of parcels falling within the ranges for each of these tests was:

| Test: | Range of Sizes Tested | Number of Parcels Inside | Number of Parcels Outside |
|---|---|---|---|
| Hamlet Zoned | 0.1 to 5.0 Acres | 18 | 114 |
| Moderate Intensity | 0.256 to 12.8 Acres | 81 | 695 |
| Low Intensity | 0.64 to 32 Acres | 93 | 817 |
| Rural Use | 1.707 to 85.33 Acres | 320 | 970 |
| Resource Management | 8.533 to 5,485 Acres | 171 | 1,051 |

For the comparison of parcels within the Hamlet zoning category, no minimum acreage was appropriate. The Hamlet parcels were compared to small parcels outside the Park from towns with villages. For the Resource Management class, no maximum acreage distinction was made, where the largest parcels in the 4,300 were included (these included 27 parcels of 1,000 acres or more, with a maximum of 5,485 acres). Of these very large parcels, a majority were inside the Park.

In our test of the Hamlet zoning class (Table A.7), there was no significant difference between those inside the Park and those outside. For these small parcels, one major difference was that those close to State owned lands received a premium, rather than the discount noted in the general case (where all parcel sizes are included).

Testing the parcels in the Moderate Intensity zoning category (Table A.8) with those outside the Park showed a significant difference for parcels inside the Park that do not meet the minimum size requirement. These parcels were discounted to 72% of the usual case (-28% discount). Quite notably, parcels zoned Moderate Intensity within Hamilton County received a substantial premium. For the general case, where the 1.28 acre minimum was met, there were no significant differences related to the blue line.

Our test of parcels zoned Low Intensity against those of comparable size outside the Park (Table A.9) showed two things: parcels inside the Park meeting the zoning minimum acreage (at least 3.2 acres) received a premium when compared with those outside the Park, while those not meeting the acreage minimum for the zoning category received a discount from the premium to bring them more in line with those outside the blue line. To illustrate this, suppose we have a parcel outside the blue line worth $5,000. The premium for those inside the Park is 38% making a comparable parcel worth $6,900. If this comparable parcel does not meet the APA zoning minimum, however, a discount of -25.1% applies, bringing its expected value down to about $5,170. In both cases the parcel inside the Park would be worth more than a comparable parcel outside the blue line, but the difference is quite small for those not meeting the acreage minimum for this zoning class.

Testing Rural Use zoning against comparable parcels outside the Park (Table A.10), once again, shows no significant differences dependent upon which side of the boundary the parcel is located. Some significant differences are noted in the equation for counties, where the coefficients for Clinton, Essex, Hamilton, Saratoga and Warren Counties are positive (a premium), while those for Franklin and Lewis Counties are negative (a discount).

Finally, when Resource Management zoning is tested against comparable parcels outside the Park a difference is noted (Table A.11). Some caution must be used in noting this difference, inasmuch as it is not significant at the .05 level (used throughout the report). With a weakened test of significance, we note a discount of -10.1% when comparing Resource Management zoned parcels inside the Park with comparably sized parcels outside.

Each of these tests matching individual zoning classes against parcels of similar sizes outside the Park produces a poorer "fit" of the data with the prediction model. When we split off the ends of our distribution of prices and acreage, the results do not explain the overall market as well. Some caution should be used in interpreting these results. The better explanation of the area's land markets is that set out earlier in this section of the report.

A final comparison ventured was to construct separate explanations of the markets for unimproved parcels on either side of the blue line. This was done to discover whether distinctions could be drawn between the two "markets" and predictors. Some interesting observations concerning these subsamples include (Tables A.2 and A.3):

- The price discount for proximity to State owned land occurs outside the Park, while nearness to State land does not affect prices for the parcels inside the Park.
- Prices inside the Park start from a higher point and are more closely related to acreage than those outside the Park, which show more evidence of time-related differences. Part of this difference is accounted for by land value outside the Park taking a while to "catch up" with Park lands.

- Parcels inside the Park from towns which include villages receive a premium, while the presence or absence of a village is immaterial to price outside the Park.

- In comparison with other parcels inside the blue line, two zoning classes receive a premium from the usual case: Moderate Intensity zoned parcels at +25.6%, and Rural Use zoned parcels at +11.8%.

- The "fit" between our data and the explanatory model is slightly better inside the Park, explaining 65% of the variance compared to 61% outside the Park's boundaries. In some part this shows the "interior" to have more commonality among it's 2,005 parcels than occurs among the 2,295 parcels along the "periphery." In addition, the division of the private lands within the Park into zoning categories created some distinctions among types of land that are not made for parcels outside the Park.

Obviously, the number of different models that can be created and analyzed for this number of parcels over these twenty-one years is quite large. The 4,300 sales allow a lot of subdivisions in terms of location and categories. But the overall picture is clear: most of the observed differences can be attributed to a market that moves at different rates for different parts of it. This is not too different from the observed market variations among neighborhoods in a city. While some properties are "hot" and move rapidly, it may take other parts of the area in question some time to catch up. This has happened in the Adirondacks, and can be expected to continue.

The cycles of market activity in the region are difficult to separate in the period immediately prior to the enactment of Adirondack Park zoning. From 1963-65 to 1969-71, a nine year period, these two parts of the regional land market moved in tandem with one another. Certain variations can be pointed out in different parts of the overall market, to be sure, but the common pattern is very evident.

Then, as the zoning plan was being enacted and discussed throughout the area, in 1972-74, the market <u>inside the Park</u> moved at a much faster rate, distancing itself from neighboring lands on the other side of the blue line. It is a

mistake to attribute all of this movement to the zoning plan itself, for other events were also transpiring, such as the Environmental Quality Bond Act (1972), the activity in the second home market nationally, and the first OPEC fuel shortage (1973). These events and economic forces are discussed further in the next section of the report. It took a considerable amount of time, up to the 1978-80 period, for this part of the regional market outside the blue line to catch up to the land market within the Park's confines.

On this large canvas of the land market over time we cannot paint a picture of zoning "costs," other than the significant case of parcels which do not meet the minimum acreage for their zoning class. The treatment within the marketplace of these cases, for undersized parcels in existence at the time the Adirondack Land Use and Development Plan was enacted, is somewhat counter-intuitive. While permits from the APA may be required for some lot sizes, the building "rights" vested by the lot's existence at the time of the Plan's enactment should make them command a premium. But markets are built upon the participants' perceptions, and there appears to be a perception that discounts the value of such parcels. Several examples of how this works out in terms of value are given in the tables and the discussion above.

Overall, we can make some general comments on how the land markets in the area work, and what influences are most important in terms of those things we have measured. We can order the components of price as follows:

- **Parcel size:** the most significant attribute of the price at which unimproved parcels are traded is the size of the lot. This is not surprising, and the foundation of the model we have used to explain prices paid is the amount of land being sold/purchased.

- **Time of sale:** also self-evident, when dealing with sales transactions taking place over an extended period of time, is the importance of when the activity took place. Snapshots taken in the mid-60s of this marketplace look very different from the same panorama taken more recently. The longer the perspective taken of a complex phenomenon, such as a market, the more important it is to be able to date the component parts.

- Location of parcel: the map of the Adirondacks has been split two ways, in terms of the distance from Albany, and in terms of the "neighborhood" effects of each county. Of these two, the more important is the distance from the urban area. Combined, they are the third entry in our determination of price.

- Parcel and buyer characteristics: unfortunately, our data did not have a number of characteristics of the land that might otherwise be desired to construct a close "fit" with the observed prices. Those incorporated, however, including the influences of water and State owned land, the presence or absence of road access, and whether they buyer was from New York State. With additional information about parcel and buyer characteristics, it would not be surprising if this indicator of value surpassed the "location" variables in our analysis.

- Zoning characteristics: finally, after these other aspects of price determination have been taken into account, the measures of zoning found to be significant — the positive influence of Moderate Intensity zoning, and the negative influences of parcels outside the blue line or inside but not meeting minimum size conditions — enter the prediction. The least important aspect of price determination, once the other factors have been taken into account, is zoning.

The overall model (Table A.1) explains 62.5% of the observed variation in prices, and the missing information concerning the parcel and/or the characteristics of the transactions themselves would do the most to improve this "fit" with the observed sales.

**Townwide Tax Bases: Results**

Earlier, in Figure 3, the annual appreciation rates for the eight study periods are displayed for the Adirondack region for the three types of towns: those wholly inside the Park, those split by the blue line, and those outside the Park boundary. These curves, for townwide tax bases which include many kinds of realty, including improvements, are somewhat different from the lines drawn in Figure 4 for unimproved parcels. A major distinction between the two graphs, besides the movement from unimproved land to entire tax bases, is that Figure 3 shows the annual appreciation rates while Figure 4 shows the percentage adjustment to price over time. The information upon which each is based is

different: in the one case we are relating price differences over time for unimproved land based on sales, in the other we are showing the appreciation averages for all classes of taxable real property based on the periodic State Board market surveys conducted between 1963 and 1983. While some prices were gathered for vacant land prior to 1963, the overall time frame for the two analyses has been kept constant to provide for a common frame of reference.

In this section of the report we make the inferential shift from the prices paid for individual unimproved parcels to track entire tax bases. The area contains some substantial differences across towns, as is shown on the map in Figure 2. Breaking the 132 towns in the analysis down into the three groupings shown in Figure 2 we find:

| | Inside Park | Split by Line | Outside Park | Combined |
|---|---|---|---|---|
| Slow Growth (less than 8%) | 13 (22.8%) | 5 (18.5%) | 14 (29.2%) | 32 (24.2%) |
| Average Growth (8-11%) | 32 (56.1%) | 18 (66.7%) | 28 (58.3%) | 78 (59.1%) |
| Rapid Growth (over 11%) | 12 (21.1%) | 4 (14.8%) | 6 (12.5%) | 22 (16.7%) |
| **Totals** | **57 (100%)** | **27 (100%)** | **48 (100%)** | |

While the slowest appreciation growth observed in these 132 towns was 4.5% per year for a town inside the Park (Clifton, in St. Lawrence County), a greater proportion of the towns outside the Park grew in value at a rate of less than eight percent per year. The fastest growth was observed in a town outside the Park (Brandon, in Franklin County) at slightly over 14% per year, closely followed by a neighboring town in St. Lawrence County to the one with the slowest yearly growth (Clare, at slightly less than 14%). Overall, proportionately more towns inside the Park can be placed in the rapid growth category than from the other two categories.

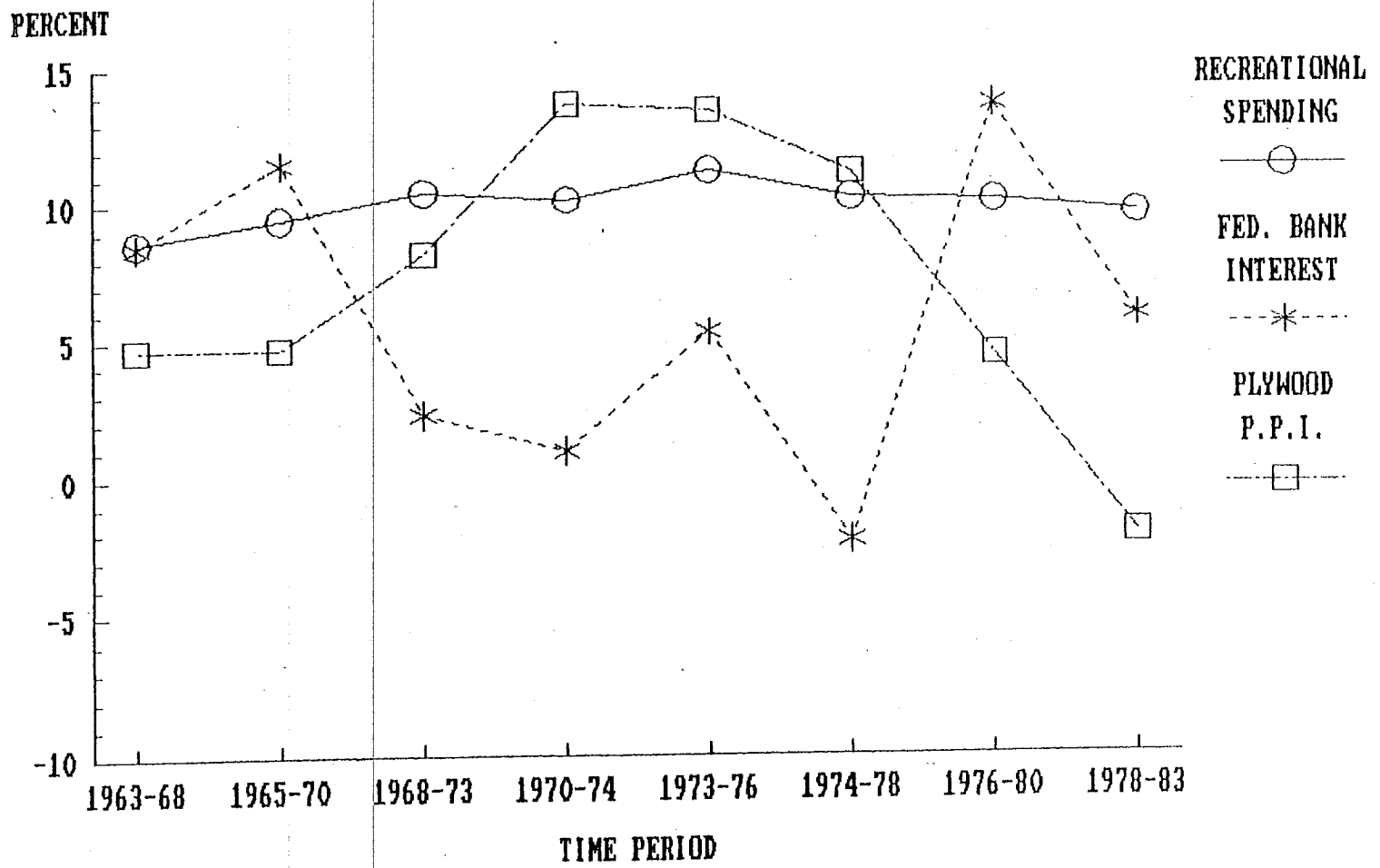
The grouping of towns into three categories of growth shows considerable commonality over the places in the study. Only eleven towns experienced growth at an annual rate of less than 7% over the study period, and only five had an annual appreciation rate at 12% or more. In general terms, we are dealing with a common pattern within the area during this 20.5-year period.

In some respects this is because they operated within a common economic climate, with the rises and falls of pertinent sectors of the national economy affecting each of them in a similar fashion. Figure 7 shows some of the factors at work within the national economy during this period. Three trends are shown, each different, but each a force within the area's economic picture.

Throughout the period recreational spending was remarkably constant, with annual rates of increase in the 9-10% range. This fact assists in the explanation of the general level of growth in the region, where substantial parts of the local economies are geared to tourism and recreational activities. The interest rates charged by the Federal Reserve to member banks, as shown in Figure 7, fluctuated considerably during the period. The periods of most rapid growth show a decline in the interest rates, with the drop in the later part of the 1960s coinciding with a "boom" in the local tax base values. The wood products industries are also a major force in the area economy, and the producer price index for plywood is shown here. This economic indicator rose substantially during the early part of the period, declining substantially for 1976-1983 periods.

Figure 7 is only illustrative of the types of economic indicators we have used to express economic conditions during which these tax base appreciation measures were made. Additional indicators of the forestry resource were used, which moved in tandem with one another during the twenty years. Alternative formulations of interest costs were incorporated, as well as general indices of aspects of cost of living and disposable income.

# FIGURE 7. SELECTED ECONOMIC TRENDS: ANNUAL RATE FOR TIME PERIOD, 1963-1983




Annual rates for each period calculated as the simple rate required to get from the start of the period to its end in even annual steps.

The model picked several indicators of economic conditions that best "fit" the observed appreciation. Together, these aspects of the value of taxable property in the Adirondack region are the most important description of the trends. This tells us that distinctions within the national economy over time are more important to our understanding of the rate of appreciation in the area than differences among the towns.

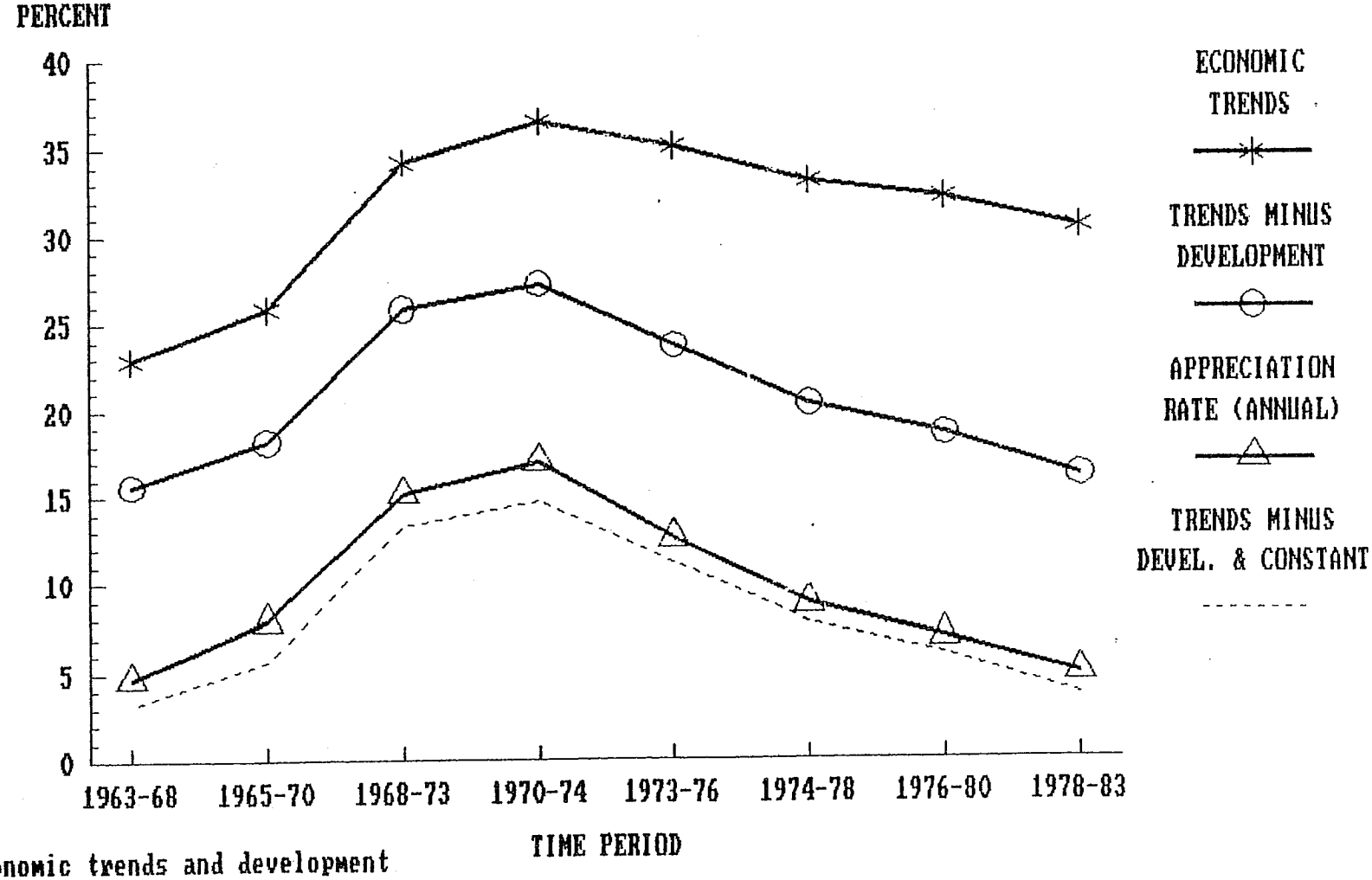
We cannot use all of the economic trends moving in tandem with the value of the tax bases because they also move in conjunction with one another. For example, the single best predictor of appreciation rates in the area was the producer price index for plywood (r=.57). Another very good indicator of appreciation was the producer price index for woodpulp, but this does not enter into the overall model because it is closely correlated to the plywood index (woodpulp correlation with appreciation rate = .50, with plywood index = .72). Similar relationships occurred among the economic trends we attempted to fit to the observed appreciation rates. Examples include a very high correlation between the cost of transportation and various consumer price indices and changes in disposable income, a strong relationship between a construction cost index and recreational spending, and a pattern of similar movements taking place over time among three different measures of interest rates.

This "fit" between economic trends and the overall growth patterns among the towns in the study places them all into a similar frame of reference. Yet we observe differences among them as well, which can be accounted for by way of measurements that describe local development in place at the start of a time period. These measurements, largely derived from decennial censuses and State Board estimates of the size of the tax base, vary both by place and over time. Straight-line trending between two censuses was done to arrive at estimates of the starting point for each time period for each town.

Figure 8 shows the average town's performance according to annual appreciation rate (line with triangles imposed), the measurement of economic indicators (asterisks), and the average "development" of the towns over time. This combination of factors, minus a constant, shows a dotted line that comes close to approximating the average annual rate of growth between 1963 and 1983. In the Figure, the top line is the estimate of the trend derived solely from economic indicators. A "correction" for the amount of development (measured as a combination of the size of the tax base at the start of the period, the percentage of improved parcels, the change in the average size of a parcel, the population per housing unit, the rate of increase of housing units, the population density, and the number of parcels overall), then drops this estimate a greater amount over time as development in the area increases (the line in Figure 8 with the circles). Finally, another correction from the model of a constant for all time periods produces the dashed line slightly below the annual appreciation rate.

The overall effect is one of slightly underestimating the average annual appreciation rate using only two types of differences: economic trends which are the same for each town but vary over time, and the differences among towns in the amount of development observed at different points. The final estimate in the model includes some other indicators, such as physical characteristics of town, location indicators, and zoning. Figure 8 shows how the general prediction of appreciation rates, and their differences among towns and over time, incorporates known aspects of the towns and the economic circumstances of the places in question.

# FIGURE 8. ECONOMIC TRENDS, LOCAL DEVELOPMENT AND AVERAGE APPRECIATION, 1963-1983




The economic trends and development indicators are composites of several annual averages for each period.

The development indicators used, in Figure 8, as a kind of "discount" of the overall economic trends, combine the following distinctions among towns:

- The towns with the larger tax bases appreciated at a lower rate. The measurement of this indicator of value used the logarithmic representation of the size of the tax base (in $ millions) at the start of the period. This negative relationship is the strongest individual predictor in the model.
- The appreciation rate increased with the percentage of parcels having houses built on them.
- The appreciation rate decreased as the average size of a parcel in the town increased.
- The appreciation rate decreased as the number of persons per housing unit increased. This can be inferred to show that those parts of the area with greater second home development increased at a faster rate.
- The appreciation rate increased in tandem with the population density.
- The appreciation rate increased for towns with a greater number of parcels.

Obviously, some of these indicators of townwide development can be juxtaposed with one another, so that the (negative) influence of the overall size of the town's tax base at the start of the period is countered, to some extent, by the population density and the number of parcels. Each of the indicators built into the overall model is "fit" with appreciation rates so that the phrase "other things being equal" describes the fit. For towns with the same overall tax base size, therefore, a greater population density indicates faster appreciation growth.

After economic trends and the demographic/development characteristics of the model have accounted for the amount of "fit" evident in Figure 8, the next most important explanation of tax base growth comes from the physical characteristics of the towns. Positive relationships with annual appreciation rates were observed for (see Table A.12):

- The area encompassed by the town. The expression of this variable shows an additional one and three-quarters percent for every one hundred square miles within the town.
- Appreciation rates increased for every mile of paved road in the town.
- Appreciation rates also increased for every mile of improved, but not paved, roadway in the towns.
- Appreciation rates increased for every mile of shoreline (large lakes and rivers) per square mile.

These characteristics of places vary over towns, but remain constant over time. Thus far in our explanation of changes in town tax bases we have incorporated variables that change over time, but are constant across towns (economic conditions), items that vary both by place and over time (demographic/development indicators), and characteristics of places that are constant over time. Two further sets of variables are built into the model: indicators of location, and characteristics of zoning.

The most important of these is the location indicators. This finding corresponds with the model explaining individual unimproved lots. In the townwide model five counties show markets distinguishable from the general case. Another two measurements are in terms of the distance from Albany. Of these, the distance in hours from Albany (measured from a point in Albany to a point in each town) shows a decrease of slightly more than one percent per year for every hour removed from Albany. This is a somewhat different measure than was used in the model for individual parcels, where separate "bands" of distance were drawn out. This is the single most important indicator of value change in this set of location indicators.

After the distance from Albany is taken into account, an increase of 1.7% per year is evident for each hour saved, from Albany, by the construction of

Interstate 87 in the mid-60s. Only after these two aspects of location are taken into account do we calculate the variations by county:

- Places in Essex County appreciated at 1.73% more per year than would be expected by the general model. This is significant because all towns in Essex County are within the Park's boundary.
- Places in Warren County appreciated at 1.69% more per year than would otherwise be expected. All of the Warren County tax bases measured in this part of the study were inside the Park.
- Places in St. Lawrence County, after the distance from Albany has been taken into account, appreciated at 1.52% more per year than would otherwise be expected.
- Places in Franklin County, also heavily impacted by the distance from Albany, appreciated at an annual rate 1.39% higher than would otherwise be expected.
- Places in Washington County appreciated at an annual rate of 1.22% higher than expected according to the general trend.

In sum, the model has extracted five counties and attached a "premium" to the growth rate after the distance from Albany (the most important aspect of location) has been taken into account. Of these five, one is close to Albany and shows a considerably higher than average appreciation rate (Washington County with a strong "urban fringe" location near the Albany/Schenectady/Troy metropolitan area). Two are, in terms of the study, entirely within the Park's boundary (Essex and Warren Counties). The remaining two are heavily discounted in terms of the distance from Albany (Franklin and St. Lawrence), where only part of that discount is reflected in actual appreciation rates. Hence the model makes an accommodation for these two counties and not for others (e.g., Clinton and Lewis) so situated.

These four groups of factors, economic trends, development, physical characteristics, and location, together account for 70.4% of the diversity of observations of Adirondack tax bases over time. A final group of factors, those

related to zoning, brings this up to the full 71.7% we obtain from analysis of appreciation rates. In the earlier look at the value trends for unimproved parcels, fitting aspects of times and place and parcel characteristics to observed prices, the model explained 62.5% of the observed differences. This look at tax bases (132 towns for eight time periods = 1,056 observations) does somewhat better, even before zoning distinctions are brought into the picture.

The final 1.3% of our explanation of appreciation of tax bases includes two types of APA zoning, locally adopted zoning (on both sides of the blue line), and a discount for places located outside the Park. The four significant aspects of zoning having an impact on the analysis are:

- **Places outside the Park:** The 48 towns outside the Park receive a discount of -1.27% from the appreciation figure for the entire 20.5 years of the study. This discount indicates appreciation, on average, is higher for places inside the Park and split by the Park boundary.

- **Locally adopted zoning plans:** Places on either side of the Park boundary that have adopted their own zoning plans show an annual increase in the appreciation rate of 0.56% above the norm. This type of non-APA zoning occurs in 22 of the 57 towns inside the Park (38.6%), six of the 27 towns split by the blue line (22.2%), and 18 of the 48 towns entirely outside the Park's boundary (37.5%).

- **Percent of town zoned Rural Use:** For the fifth (1973-1976) and subsequent periods in the analysis, the percentage of each town with Rural Use zoning entered the model as a significant and negative impact. The effect of this percentage was to lower the appreciation rate by 0.36% for every ten percent of the town's land area zoned Rural Use.

- **Percent of town zoned Resource Management:** For the fifth and subsequent periods in the analysis, the percentage of each town with Resource Management zoning entered the model as a significant and negative impact. The effect in this case was to lower the anticipated appreciation by 0.34% for every ten percent of the town's land area zoned Resource Management.

The net effect of the two APA zoning categories found to be significant is that they must apply to over one-third of the town's land area just to achieve the level recorded for towns outside the Park over the entire period of the study.

The following table shows the distribution of towns in the study achieving this measure of "zoning costs":

Table 5. Combined Costs and Benefits from Location and Zoning

| | Inside Park | Split by Blue Line | Outside Park |
|---|---|---|---|
| Net Benefit from Zoning/Location | 12 | 4 | 18 |
| "Cost" less than Outside Location | 30 | 18 | 5 |
| "Cost" identical to Outside Location | 1 | 0 | 25 |
| "Cost" greater than Outside Location | 14 | 5 | 0 |

Table 5 shows the results derived by combining county location variables and the "costs" of zoning found to be significant (since 1973) or of being located outside the Park (throughout the study period, 1963-1983). The model "adjusts" to fit the observed appreciation rates. The adjustments made include increments for locations within five counties (Essex, Franklin, St. Lawrence, Warren and Washington), a "cost" associated with an outside the Park location (-1.27% per year), and finally a "cost" associated with the percent of the towns in the study having APA Rural Use and Resource Management zoned lands. Much of this can be attributed to the timing of the appreciation cycles: inside the Park appreciated at a faster rate earlier, while the area outside the Park has never quite caught up. Figure 3 shows the dynamics of this cycle.

An analogy to illustrate this effect is to assume the market is a four sided figure: from inside to outside, and before APA zoning to after its enactment. Three of the four quadrants are being held down while the fourth floats upward. The outside is held down both before and after, and the "after" is held down both

inside and outside. The remaining area, "inside-before" rises to higher levels of appreciation.

Once again, as happened in the analysis of individual parcels, the explanatory ability of the model drops when we select only the period since the enactment of APA zoning to analyze. For the overall model, we have obtained a "fit" explaining 71.7% of the variance observed (1963-1983). When the places are less distinguishable, since 1973, the "fit" drops to 57.6%, and several of the explanatory variables drop out of the equation. Most significantly, the only zoning variable remaining in the model after 1973 is the enactment of local zoning laws: neither the inside/outside distinction, nor any of the APA zoning categories are significant predictors of different appreciation rates for the period that APA zoning has been in place.

This is a very important finding for our discussion of the "costs" of zoning. The locally adopted zoning laws, as opposed to the State zoning enacted by the Plan, shows a positive influence of over one percent per year since 1973 (i.e., not a "cost" but a "benefit"). No other zoning-related distinction is made within the time-shortened model (1973-1983). During this time the economic trends are less important in the explanation of appreciation observations, the demographic/development characteristics of the towns are more important, and some significant location differences are observed: both Clinton and St. Lawrence Counties decline with respect to the overall trend (-2.9 and -1.4% per year, respectively).

Splitting the two groups of towns, those inside and outside the Park, and analyzing the appreciation rates separately, shows somewhat different factors to be significant in explaining the trends observed over the 20.5 years (Tables A.13 and A.14). A greater diversity of economic trends accounts for the fluctuations

in appreciation over time inside the Park than is brought into the model than for the towns outside. Included in the "inside the Park" analysis, but dropped from the model explaining variations in appreciation outside the blue line are the trends for various parts of the recreation industry, including the spending index incorporated in the overall model. At the same time, the model explaining variations in appreciation outside the Park uses more distinctions across places noting demographic and development differences. Both the model for towns inside the Park and the model for towns outside the Park found a significant, positive influence in the number of square miles, but the use of land area made considerably more difference in explaining appreciation outside the blue line (where variations in size among towns are not as great). A greater number of location differences were noted inside the Park, including the travel time from Albany and the time saved by the construction of Interstate 87. Neither of these time-distance factors were brought into the explanation of towns outside the Park. A final distinction, appropriate only to lands inside the Park, is that the percentage of the towns zoned in the Low Intensity category had a higher appreciation rate than did the other parts of towns in the Park.

Overall, just as observed in the analysis of individual unimproved parcels, the "fit" of the explanatory model was higher inside ($r^2$=.77) than outside ($r^2$=.68) the Park. Once again the "interior" is more readily observed as a common marketplace than is the "periphery" of the area being analyzed. In these terms, the boundary of the Park appears to be drawn around similar types of towns as distinguished from those immediately proximate to it.

**Zoning, Costs, and the Adirondack Land Market**

Markets, including the market for land, are composed of factors that can be distilled into individuals' desires to possess something — demand — and the

availability of it — supply. For all practical purposes, it is safe to assume that the supply is fixed: land is the stuff "they're not making any more of." Observations about markets, prices, are presumed to be the intersection of supply and demand. With the supply fixed, observations about the value of land or about the growth of tax bases can be inferred to be statements about demand.

The report treats two aspects of Adirondack land values, the prices paid for unimproved parcels and the appreciation growth of area tax bases, both before and after the implementation of the Adirondack Park Land Use and Development Plan in 1973. The critical question phrased for the research into these two aspects of the overall land market has been: did the implementation of State zoning in the Adirondack Park create "costs" for local landowners and property taxing jurisdictions in the area? The evidence brought into the analysis of this question includes 4,300 sales of unimproved parcels of land during the period from ten years before the Plan was enacted to ten years after it was put into place, as well as the results of ten separate measurements of area tax bases by the State Board of Equalization and Assessment during the same period. There is no other study of zoning that presents such a comprehensive picture of "effects" both before and after the implementation of a zoning plan while presenting a control for similarly located places where no such plan was enacted.

It often takes a few years for the effects of events such as the Plan to be well-defined in our observations of markets. No study, in those terms, can be deemed "complete," for the final returns are never in. Yet the ten years analyzed in this report are a substantial improvement over prior attempts to make statements about the Plan's effects in the area's realty markets. For those prior analyses, the data simply did not exist. The S.B.E.A. survey of market values showing price levels for 1983, for example, was only completed in late 1987.

The price effects on developed parcels in place at the time of the zoning enactment have been shown to be positive (a net benefit) in many prior studies. Therefore, at the micro-analytic level, the most stringent test of zoning effects is on unimproved parcels. Our results from the analysis of 4,300 such sales are straightforward:

- Starting from the same price level prior to the enactment of Adirondack Park zoning, unimproved parcels inside the Park leapt ahead of the values for comparable parcels outside the Park at about the time of the adoption of the Adirondack Park Land Use and Development Plan. Since then, unimproved land prices inside the Park have leveled off, allowing the prices for similar parcels near the Park to catch up. At present, prices for the two areas are once again remarkably similar.
- The only distinction made by zoning class shows a net benefit for parcels zoned in the Moderate Intensity category.
- Across zoning classes, a cost has been discovered for unimproved parcels not meeting the minimum lot size for the respective category. This finding is somewhat counter-intuitive, since development rights for parcels in place at the time of the enactment of the Plan were "vested" in them.
- There is a substantial premium attached to parcels near water.
- New York State buyers of Adirondack lands pay 10% less than those from other areas.
- Location effects in the area marketplace are strong, with the most important indicator a negative influence for places more than three hours from Albany.
- When tested separately against comparably sized parcels outside the Park:
  - There were no significant differences for parcels in the Hamlet zoning category when compared with parcels in towns having villages outside the Park.

- There were no significant differences for parcels meeting the minimum size requirement (1.28 acres) between those in the Moderate Intensity category and those of comparable size outside the Park. Parcels in this category inside the Park which did not meet the minimum acreage showed a discount of -28%.
- There was a significant difference in prices paid for parcels zoned Low Intensity. When compared with similar sized parcels outside the Park, those within the blue line received a premium of +38%. For parcels zoned Low Intensity which do not meet the minimum acreage requirement (3.2 acres), this premium is reduced to only +3.4%.
- There were no significant differences for parcels in the Rural Use zoning category when compared with similar parcels outside the Park.
- When comparing parcels zoned Resource Management with similar sized parcels outside the Park, a significant difference of -10.1% is only present when a weakened statistical test is applied.

- When calculating price levels separately for parcels on either side of the blue line, proximity to State owned land produces a discount outside the Park, but has no effect inside the Park.
- Prices for parcels inside the Park are more closely tied to acreage than are parcels outside the Park. In part, this may be attributed to a paucity of parcel characteristics brought into the analysis, where parcels inside the Park are more similar to one another than those outside.
- Unimproved parcels inside the Park in towns having a village receive a premium, while there are no similar effects outside the Park.
- In comparison with other parcels inside the blue line, there is a premium attached to those zoned Moderate Intensity (+25.6%) and those zoned Rural Use (+11.8%).
- The model is a better predictor of value inside the Park than outside. This may indicate greater similarity among parcels in the Park than along its periphery, and may also reflect the additional distinctions made across parcels of land by the zoning categories.

These statements about the prices paid for unimproved land in the area of the Adirondack Park between 1963 and 1983 do not display substantial costs attached to the zoning plan. And unimproved parcels form the most stringent test of the land market, where others have shown price increments for improvements in place at the time zoning is enacted.

The timing of value peaks and troughs is different, to some extent, between the area within the blue line and the area immediately surrounding it. The Park appears to be more sensitive to "boom and bust" cycles, declining more rapidly in times of price downturns and improving to higher levels faster in periods of high demand. For the unimproved parcels in the study, this is apparent from the market downturn in the mid-1960s and more recently.

The volatility of the Park land market causes it to lose value and to gain value rapidly. This fact was evident when the Park lands lost about 15% of value between the 1963-65 and 1966-68 periods when similar land outside the Park lost only 4% during the same time. Later, prices declined from 1975-77 peaks by almost 11% inside the Park. Outside the Park the peak of observed prices paid for land did not occur until later (1978-80) and the decline was not as steep, at 5%. If newspaper accounts of land prices in the area in the recent past are indicative, a similar land "boom" began inside the Park at the time that these data stop — after 1983 — concurrent with the substantial drop in interest rates and the retention of second home mortgage and interest payments as income tax deductions by the tax reform act of 1986.

As an example of such accounts, see "Building Boom in Adirondack Park Tests Laws to Preserve Wilderness," by Elizabeth Kolbert, in The New York Times, August 4, 1987. The Times article cites an increase in the number of building permit applications of 35% in a single year, along with an increase in

land prices of 30 percent over last year — "even though the parcels tend to be in the most remote, and least expensive, areas." We have no comparable statements about land values for the areas immediately surrounding the Park during this recent land "boom." Nevertheless, a "lagged" effect similar to the one observed in Figure 4 may well be beginning anew.

The effects of zoning when aggregated to entire town tax bases can only be ascertained in the area using the town as the unit of analysis. This extends the analysis to purported market effects at a second level: beyond the individual land owners to the taxing jurisdictions in which they are taxpayers. With this set of tests for zoning costs the analysis begins to include the trends taking place in the national economy, as well as the physical characteristics of the towns and the demographic and development indicators evident over time and across towns. This macro-level analysis, incorporating already developed land as well as undeveloped parcels, contains some similar findings to those stated above, as well as some differences.

Our examination of the Adirondack tax bases presents these findings:

- **The single most important indicators of tax base appreciation in the area can be attributed to national economic forces, especially the health of the forestry and recreation industries.**

- **Once economic forces are taken into account, the set of predictors found to be most significant in explaining appreciation rates were the demographic and development characteristics of the towns. Less developed places (usually inside the Park) appreciated at a faster rate.**

- **The third group of indicators for predicting tax base growth were the physical aspects of each town, including the square miles of land area, the access from roads, and the amount of shoreline attributable to major bodies of water.**

- The fourth group of indicators for explaining appreciation differences included two types of locations: as measured in distance from Albany or in time saved by the construction of Interstate 87, and as indicated in five of the area counties (Essex, Franklin, St. Lawrence, Warren and Washington).

- The model separates the towns over time (before and after APA zoning) and across types of towns (inside and outside the Park, as well as split by the blue line). Three of the quadrants, excepting only inside the Park prior to the enactment of the Plan, show some kind of "cost." Effects of zoning, expressed as costs, do not exceed the lowered rate of appreciation outside the park for 65 of the 84 towns with APA zoning. In the other 19, the combined percentage of Rural Use and Resource Management zoned lands shows an APA zoning-related "costs" of an amount greater than observed outside the Park.

- The overall explanation of tax base appreciation provided a better fit with the data than did the model for individual parcels.

- The overall explanation of tax base appreciation was better inside the Park than outside its borders.

- When only the time since the enactment of the Plan is analyzed, there are no significant APA zoning distinctions: neither costs nor benefits.

- The separate analysis of towns inside the Park and towns outside its boundaries shows the observed appreciation trends to be better explained within the blue line.

The national second home market is once again very healthy in the Northeast, as it was in the late 1960s and early 1970s. But the overall recovery of the market, as measured by the periodic State Board surveys of market value, will not be available for some years. Consequently, it is not clear what is being shown by the pattern of decreasing appreciation rates for the entire area since

1973. It may simply be the downward slope of a "boom and bust" cycle which will rise again as subsequent measurements become available.

The most significant aspect of this downturn, though, is that it was pervasive throughout the Adirondack region. Towns inside the Park did not suffer tax base losses, regardless of the composition of the APA zoning regulations within the towns, when compared to towns split by the blue line or towns outside and neighbors to the Park.

One unmeasured aspect of the growth of tax bases and the value of unimproved parcels in the area was the Environmental Quality Bond Act of 1972. This Bond Act made money available for the State purchase of lands in the area, and this activity may recur with the passage of the Environmental Quality Bond Act of 1986. If the first such Bond Act fueled land speculation, the second may do likewise. One of the obvious repercussions of State purchases is to lessen the available amount of land: the <u>supply</u> for purchase by private interests. Under those circumstances, if demand is constant the prices paid should rise.

The extensive research reported herein on the consequences of State imposed zoning in the Adirondack region will never serve to answer all of the questions raised by those who oppose such governmental interventions. It does, however, put to rest many of the speculations concerning "costs" as embodied in the controversy over the zoning powers granted to the Adirondack Park Agency. If such costs exist, they are not apparent in the prices paid for unimproved land in the area nor in the tax base appreciation rates of towns since the zoning was enacted.

Several findings in the report present openings for future research. For example, the examination of the unimproved parcels showed some unexpected negative results for those proximate to State owned lands. This is counter-

intuitive when compared with Vrooman's findings and with real estate advertisements in the area which portray land with such "forever wild" neighbors as commanding a premium. Upon closer examination, the result is not significant for lands inside the Park, but remains significant and negative for the area outside the Park. In part, this could be examined in terms of the physical characteristics of parcels proximate to State owned property. If the State has purchased less desirable (less subject to development) lands outside the Park, that fact would account for the observed "discount." Inside the Park, such lands may have characteristics similar to neighboring parcels. A major, and sharply focused finding from the research is that land values in the area are tied to the health of the national and local economies. Forces larger than the characteristics and locations of places and "demand" derived from demographic and development indicators are most indicative of values. The measurements of economic forces in the analysis of tax bases showed national trends to be paramount to setting appreciation rates, but only the national trends significant to the area, such as the health of the forestry and recreation industries.

Two findings with respect to the timing of appreciation trends are evident. First, the area inside the Park appears more volatile, more sensitive to the cycles of "boom" and "bust" in the land markets. This appears in both analyses, with sharper declines and advances more readily apparent in the analysis of unimproved parcels. The second major finding is that the appreciation in unimproved parcels lags behind the value trends observed for entire tax bases. The beginning of the "boom" cycle in values shows up earlier in the analysis of town tax bases than it appears in the analysis of unimproved parcels. This suggests a line of reasoning that takes into account current appreciation advances among already developed parcels prior to the reflection of this trend

for vacant land. If developments are becoming more valuable, the search for land to develop intensifies.

Finally, the major finding of the report with respect to the putative "costs" of zoning should be restated: the analysis of tax bases since 1973 showed no such costs. Since 1973 the tax bases inside the Park cannot be statistically distinguished from those outside the blue line. In the analysis of the value trends for unimproved land, the places outside the Park "caught up" with the prior appreciation occurring inside its boundary. In the analysis of tax bases, no similar trend took place. Instead, the appreciation in value of the places in and near the Adirondack Park follows a common pattern since the Land Use and Development Plan was enacted.

# APPENDIX

Table A.1 Unimproved Parcel Prices, 1963-1983: Overall Model

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.414 (.007) | ... |
| **Time Trends:** | | |
| | **I. Inside Park** | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | same as base period | 1.000 |
| 1975-77 | 0.115 (.054) | 1.122 |
| 1972-74 | base period | 1.000 |
| 1969-71 | -0.582 (.057) | 0.559 |
| 1966-68 | -0.914 (.073) | 0.401 |
| 1963-65 | -0.749 (.076) | 0.473 |
| | **II. Outside Park** | |
| 1981-83 | 0.272 (.051) | 1.313 |
| 1978-80 | 0.323 (.055) | 1.382 |
| 1975-77 | 0.183 (.051) | 1.201 |
| 1972-74 | base period | 1.000 |
| 1969-71 | -0.362 (.068) | 0.696 |
| 1966-68 | -0.638 (.097) | 0.528 |
| 1963-65 | -0.596 (.085) | 0.551 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.508 (.032) | 1.662 |
| No Road Access | -0.223 (.032) | 0.800 |
| In State Buyer | -0.101 (.028) | 0.904 |
| State Land Influence | -0.175 (.058) | 0.840 |
| **Location Characteristics:** | | |
| Outside the Park | -0.246 (.047) | 0.782 |
| Lewis County | -0.713 (.061) | 0.490 |
| Fulton County | -0.348 (.110) | 0.706 |
| Oneida County | -0.274 (.092) | 0.760 |
| 3-4 hours to Albany | -0.425 (.027) | 0.654 |
| Over 4 hours to Albany | -0.505 (.056) | 0.604 |
| **Zoning Characteristics:** | | |
| Moderate Intensity | 0.201 (.076) | 1.223 |
| Below Zoning Minimum | -0.152 (.058) | 0.859 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -1.068 (.092) | 0.344 |
| Tax Stamps at $1,000 | -0.868 (.079) | 0.420 |
| **Constant** | 8.018 (.044) | |

**R Square = .625** **Standard Error = .787**

**N = 4,300**

Table A.2 Unimproved Parcel Prices, 1963-1983: Parcels Inside the Park

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.428 (.009) | ... |
| **Time Trends:** | | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | same as base period | 1.000 |
| 1975-77 | same as base period | 1.000 |
| 1972-74 | base period | 1.000 |
| 1969-71 | -0.549 (.060) | 0.577 |
| 1966-68 | -0.870 (.075) | 0.419 |
| 1963-65 | -0.739 (.078) | 0.478 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.594 (.042) | 1.810 |
| No Road Access | -0.172 (.044) | 0.842 |
| In State Buyer | -0.133 (.039) | 0.876 |
| State Land Influence | same as base | 1.000 |
| Town with Village | 0.233 (.043) | 1.262 |
| **Location Characteristics:** | | |
| Clinton County | -0.338 (.060) | 0.713 |
| Franklin County | 0.163 (.080) | 1.177 |
| Fulton County | -0.318 (.125) | 0.728 |
| Lewis County | -0.525 (.176) | 0.592 |
| Warren County | 0.153 (.066) | 1.165 |
| Washington County | 0.559 (.241) | 1.749 |
| 3-4 hours to Albany | -0.228 (.055) | 0.654 |
| Over 4 hours to Albany | -0.390 (.136) | 0.604 |
| **Zoning Characteristics:** | | |
| Moderate Intensity | 0.228 (.080) | 1.256 |
| Rural Use | 0.112 (.045) | 1.118 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -0.884 (.139) | 0.413 |
| Tax Stamps at $1,000 | -0.920 (.132) | 0.399 |
| Constant | 7.817 (.058) | |

R Square = .649 Standard Error = .791

N = 2,005

Table A.3 Unimproved Parcel Prices, 1963-1983: Parcels Outside the Park

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.414 (.009) | ... |
| **Time Trends:** | | |
| 1981-83 | 0.207 (.052) | 1.230 |
| 1978-80 | 0.283 (.054) | 1.326 |
| 1975-77 | 0.173 (.049) | 1.189 |
| 1972-74 | base period | 1.000 |
| 1969-71 | -0.417 (.066) | 0.659 |
| 1966-68 | -0.710 (.095) | 0.492 |
| 1963-65 | -0.644 (.083) | 0.525 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.275 (.054) | 1.316 |
| No Road Access | -0.292 (.046) | 0.747 |
| In State Buyer | same as base | 1.000 |
| State Land Influence | -0.269 (.115) | 0.764 |
| Town with Village | same as base | 1.000 |
| **Location Characteristics:** | | |
| Franklin County | -0.450 (.087) | 0.638 |
| Lewis County | -0.775 (.064) | 0.461 |
| Oneida County | -0.356 (.093) | 0.700 |
| 3-4 hours to Albany | -0.453 (.038) | 0.636 |
| Over 4 hours to Albany | -0.536 (.062) | 0.585 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -0.884 (.139) | 0.413 |
| Tax Stamps at $1,000 | -0.920 (.132) | 0.399 |
| Constant | 7.807 (.057) | |

R Square = .605 Standard Error = .762

N = 2,295

Table A.4 Unimproved Parcel Prices, 1974-1983: Overall Model

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.475 (.008) | ... |
| Time Trends: | | |
| | **I. Inside Park** | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | same as base period | 1.000 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| | **II. Outside Park** | |
| 1981-83 | 0.204 (.046) | 1.227 |
| 1978-80 | 0.221 (.049) | 1.247 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.467 (.040) | 1.595 |
| No Road Access | -0.275 (.037) | 0.760 |
| In State Buyer | -0.103 (.033) | 0.902 |
| State Land Influence | -0.160 (.066) | 0.852 |
| **Location Characteristics:** | | |
| Outside the Park | -0.124 (.042) | 0.883 |
| Lewis County | -0.492 (.069) | 0.611 |
| Oneida County | -0.282 (.107) | 0.754 |
| 3-4 hours to Albany | -0.435 (.032) | 0.647 |
| Over 4 hours to Albany | -0.545 (.063) | 0.580 |
| **Zoning Characteristics:** | | |
| Moderate Intensity | 0.284 (.074) | 1.329 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -0.726 (.170) | 0.484 |
| Tax Stamps at $1,000 | -0.507 (.131) | 0.602 |
| **Constant** | 7.843 (.048) | |

**R Square = .651** **Standard Error = .743**

**N = 2,835**

Table A.5 Unimproved Parcel Prices, 1974-1983: Inside the Park

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| **Log of Acres** | 0.495 (.011) | ... |
| **Time Trends:** | | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | same as base period | 1.000 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.463 (.051) | 1.588 |
| No Road Access | -0.226 (.053) | 0.798 |
| In State Buyer | -0.155 (.047) | 0.856 |
| State Land Influence | same as base | 1.000 |
| **Location Characteristics:** | | |
| Clinton County | -0.374 (.062) | 0.688 |
| Fulton County | -0.281 (.136) | 0.755 |
| St. Lawrence County | -0.209 (.077) | 0.812 |
| 3-4 hours to Albany | -0.128 (.058) | 0.880 |
| Over 4 hours to Albany | same as base | 1.000 |
| **Zoning Characteristics:** | | |
| Moderate Intensity | 0.330 (.076) | 1.391 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | same as base | 1.000 |
| Tax Stamps at $1,000 | -0.634 (.213) | 0.530 |
| **Constant** | 7.794 (.065) | |

**R Square = .674** **Standard Error = .720**

**N = 1,196**

Table A.6 Unimproved Parcel Prices, 1974-1983: Outside the Park

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.457 (.010) | ... |
| **Time Trends:** | | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | 0.102 (.043) | 1.108 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.345 (.066) | 1.412 |
| No Road Access | -0.362 (.052) | 0.697 |
| In State Buyer | same as base | 1.000 |
| State Land Influence | same as base | 1.000 |
| **Location Characteristics:** | | |
| Clinton County | 0.168 (.056) | 1.183 |
| Franklin County | -0.470 (.101) | 0.625 |
| Lewis County | -0.529 (.083) | 0.589 |
| Oneida County | -0.310 (.121) | 0.733 |
| Saratoga County | 0.193 (.087) | 1.213 |
| 3-4 hours to Albany | -0.454 (.058) | 0.635 |
| Over 4 hours to Albany | -0.495 (.091) | 0.609 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -0.921 (.190) | 0.398 |
| Tax Stamps at $1,000 | -0.512 (.163) | 0.600 |
| Constant | 7.737 (.075) | |

R Square = .627 Standard Error = .740

N = 1,639

Table A.7 Unimproved Parcel Prices, 1974-1983: Hamlet Zoning

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.368 (.076) | ... |
| **Time Trends:** | | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | same as base period | 1.000 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.311 (.174)** | 1.364 |
| No Road Access | 0.848 (.283) | 2.335 |
| In State Buyer | same as base | 1.000 |
| State Land Influence | 1.492 (.741) | 4.447 |
| Town with Village | same as base | 1.000 |
| **Location Characteristics:** | | |
| Lewis County | -0.765 (.147) | 0.466 |
| Saratoga County | 0.497 (.234) | 1.644 |
| 3-4 hours to Albany | -0.307 (.161)** | 0.736 |
| Over 4 hours to Albany | same as base | 1.000 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -0.921 (.378) | 0.398 |
| Tax Stamps at $1,000 | same as base | 1.000 |
| **Constant** | 7.649 (.146) | |

**R Square = .488** **Standard Error = .717**

**N = 132**

**: statistical significance = .1 > p > .05

Note: Comparable parcels in range 0.1 to 5.0 acres, towns with villages.

Table A.8 Unimproved Parcel Prices, 1974-1983: Moderate Intensity Zoning

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.271 (.028) | ... |
| **Time Trends:** | | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | same as base period | 1.000 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.504 (.087) | 1.655 |
| No Road Access | -0.301 (.088) | 0.740 |
| In State Buyer | same as base | 1.000 |
| State Land Influence | same as base | 1.000 |
| Town with Village | -0.212 (.072) | 0.809 |
| **Location Characteristics:** | | |
| Franklin County | -0.782 (.201) | 0.457 |
| Hamilton County | 1.072 (.311) | 2.921 |
| Lewis County | -0.772 (.109) | 0.462 |
| St. Lawrence County | -0.343 (.079) | 0.709 |
| Saratoga County | 0.209 (.092) | 1.233 |
| 3-4 hours to Albany | -0.176 (.072) | 0.839 |
| Over 4 hours to Albany | same as base | 1.000 |
| **Zoning Characteristics:** | | |
| Below Zoning Minimum | -0.329 (.152) | 0.720 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -1.219 (.214) | 0.295 |
| Tax Stamps at $1,000 | -0.547 (.181) | 0.579 |
| **Constant** | 7.928 (.074) | |

**R Square = .362** **Standard Error = .797**

**N = 776**

Note: Comparable parcels in range 0.1 to 12.8 acres.

Table A.9 Unimproved Parcel Prices, 1974-1983: Low Intensity Zoning

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.297 (.023) | ... |
| **Time Trends:** | | |
| 1981-83 | same as base period | 1.000 |
| 1978-80 | 0.103 (.103) | 1.108 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.507 (.091) | 1.661 |
| No Road Access | -0.516 (.076) | 0.597 |
| In State Buyer | -0.214 (.063) | 0.807 |
| State Land Influence | -0.293 (.157)** | 0.746 |
| Town with Village | -0.112 (.061)** | 0.894 |
| **Location Characteristics:** | | |
| Franklin County | -0.405 (.120) | 0.667 |
| Lewis County | -0.734 (.102) | 0.480 |
| St. Lawrence County | -0.363 (.072) | 0.696 |
| 3-4 hours to Albany | -0.241 (.062) | 0.786 |
| Over 4 hours to Albany | same as base | 1.000 |
| **Zoning Characteristics:** | | |
| Low Intensity | 0.322 (.104) | 1.380 |
| Below Zoning Minimum | -0.288 (.175) | 0.749 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -1.372 (.311) | 0.254 |
| Tax Stamps at $1,000 | -0.818 (.212) | 0.441 |
| **Constant** | 8.074 (.092) | |

**R Square = .387** **Standard Error = .749**

**N = 910**

**: statistical significance = .1 > p > .05

Note: Comparable parcels in range 0.64 to 32.0 acres.

Table A.10 Unimproved Parcel Prices, 1974-1983: Rural Use Zoning

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.498 (.018) | ... |
| **Time Trends:** | | |
| 1981-83 | 0.095 (.050)** | 1.100 |
| 1978-80 | 0.152 (0.53) | 1.164 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.244 (.069) | 1.276 |
| No Road Access | -0.452 (.056) | 0.637 |
| In State Buyer | -0.144 (.046) | 0.866 |
| State Land Influence | -0.186 (.102)** | 0.830 |
| Town with Village | same as base | 1.000 |
| **Location Characteristics:** | | |
| Clinton County | 0.293 (.059) | 1.341 |
| Essex County | 0.229 (.138)** | 1.257 |
| Franklin County | -0.163 (.098)** | 0.850 |
| Hamilton County | 0.282 (.145)** | 1.325 |
| Lewis County | -0.178 (.093)** | 0.837 |
| Saratoga County | 0.378 (.081) | 1.460 |
| Warren County | 0.509 (.170) | 1.663 |
| 3-4 hours to Albany | -0.487 (.060) | 0.615 |
| Over 4 hours to Albany | -0.431 (.095) | 0.650 |
| **Zoning Characteristics:** | | |
| Rural Use | same as base | 1.000 |
| Below Zoning Minimum | same as base | 1.000 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -1.530 (.698) | 0.217 |
| Tax Stamps at $1,000 | -1.166 (.213) | 0.312 |
| **Constant** | 7.424 (.092) | |

**R Square = .454** **Standard Error = .692**

**N = 1,290**

**: statistical significance = .1 > p > .05

Note: Comparable parcels in range 1.7 to 85.3 acres.

Table A.11 Unimproved Parcel Prices, 1974-1983: Resource Management Zoning

| Independent Variables | Coefficient (Standard Error) | Multiplier |
|---|---|---|
| Log of Acres | 0.671 (.019) | ... |
| **Time Trends:** | | |
| 1981-83 | 0.224 (.047) | 1.250 |
| 1978-80 | 0.209 (.048) | 1.233 |
| 1975-77 | same as base period | 1.000 |
| 1974 | base period | 1.000 |
| **Parcel and Buyer Characteristics:** | | |
| Water Influence | 0.249 (.061) | 1.282 |
| No Road Access | -0.365 (.049) | 0.695 |
| In State Buyer | -0.142 (.042) | 0.867 |
| State Land Influence | same as base | 1.000 |
| Town with Village | same as base | 1.000 |
| **Location Characteristics:** | | |
| Franklin County | -0.242 (.083) | 0.785 |
| Lewis County | -0.360 (.082) | 0.697 |
| Oneida County | -0.293 (.106) | 0.746 |
| St. Lawrence County | -0.104 (.060)** | 0.901 |
| 3-4 hours to Albany | -0.610 (.048) | 0.543 |
| Over 4 hours to Albany | -0.622 (.094) | 0.537 |
| **Zoning Characteristics:** | | |
| Resource Management | -0.107 (.058)** | 0.899 |
| Below Zoning Minimum | same as base | 1.000 |
| **Price Estimation Adjustments:** | | |
| Tax Stamps at $500 | -1.473 (.645) | 0.229 |
| Tax Stamps at $1,000 | -1.284 (.456) | 0.277 |
| **Constant** | 7.104 (.099) | |

**R Square = .592** **Standard Error = .640**

**N = 1,222**

**: statistical significance = .1 > p > .05

Note: Comparable parcels in range 8.53 acres and larger.

Table A.12 Predicting Annual Appreciation Rates for 132 Towns: 1963-1983

| | Coefficient | (Standard Error) | T-test |
|---|---|---|---|
| **National Economic Trends:** | | | |
| Rental Consumer Price Index | 1.507 | (.117) | 12.848 |
| Outboard Motor Sales Index | 0.303 | (.025) | 12.086 |
| Plywood Producer Price Index | 0.305 | (.040) | 7.603 |
| Recreational Spending Index | 2.207 | (.291) | 7.571 |
| Federal Reserve Interest Rate to Banks | -0.088 | (.027) | -3.235 |
| **Demographic and Development Indicators:** | | | |
| Log of Taxbase ($ millions) | -4.759 | (.281) | -16.951 |
| Percent of Parcels with Improvements | 3.281 | (.891) | 3.683 |
| Rate of Change in Housing Units | 0.144 | (.043) | 3.331 |
| Average Parcel Size (acres) | -0.008 | (.003) | -3.030 |
| Population per Housing Unit | -0.497 | (.181) | -2.746 |
| Population Density | 7.903 | (2.953) | 2.676 |
| Number of Parcels (000) | 0.539 | (.225) | 2.398 |
| **Physical Characteristics of Towns:** | | | |
| Area in Square Miles (100) | 1.762 | (.278) | 6.333 |
| Miles of Paved Road | 0.025 | (.006) | 3.933 |
| Miles of Dirt Road | 0.023 | (.007) | 3.267 |
| Miles of Shore per Square Mile | 1.377 | (.717) | 1.922 |
| **Characteristics of Location:** | | | |
| Essex County | 1.728 | (.358) | 4.829 |
| Washington County | 1.224 | (.466) | 2.627 |
| Franklin County | 1.389 | (.405) | 3.432 |
| Warren County | 1.690 | (.488) | 3.463 |
| St. Lawrence County | 1.521 | (.423) | 3.594 |
| Hours from Albany | -1.039 | (.204) | -5.090 |
| Hours saved by Interstate 87 | 1.688 | (.474) | 3.563 |
| **Zoning Characteristics:** | | | |
| Percent Zoned Rural Use | -0.036 | (.011) | -3.264 |
| Percent Zoned Resource Management | -0.034 | (.009) | -3.907 |
| Town Wholly Outside Park | -1.271 | (.334) | -3.799 |
| Locally Adopted Zoning Plan | 0.557 | (.242) | 2.304 |
| **Constant** | -12.531 | (2.521) | -4.971 |

**R Square = .717** **Standard Error = 3.148**

**N = 1,056 (132 towns, 8 time periods)**

**F = 96.225**

Table A.13 -Predicting Annual Appreciation Rates: Towns Inside Park, 1963-1983

| | Coefficient (Standard Error) | | T-test |
|---|---|---|---|
| **National Economic Trends:** | | | |
| Outboard Motor Sales Index | 0.522 | (.045) | 11.577 |
| Treasury Bills Interest Rate | -0.307 | (.053) | -5.743 |
| Boeckh Construction Cost Index | 1.416 | (.306) | 4.626 |
| Transportation Cost Index | 0.282 | (.100) | 2.814 |
| Recreational Spending Index | 1.228 | (.565) | 2.173 |
| **Demographic and Development Indicators:** | | | |
| Log of Taxbase ($ millions) | -4.281 | (.348) | -12.316 |
| Rate of Change in Housing Units | 0.128 | (.045) | 2.839 |
| Number of Housing Units (000) | 1.903 | (.347) | 5.483 |
| **Physical Characteristics of Towns:** | | | |
| Area in Square Miles (100) | 1.069 | (.205) | 5.206 |
| Miles of Road (Paved and Dirt) | 0.019 | (.007) | 2.860 |
| **Characteristics of Location:** | | | |
| Clinton County | -2.552 | (.700) | -3.645 |
| Warren County | 1.012 | (.485) | 2.086 |
| Hours from Albany | -0.690 | (.260) | -2.654 |
| Hours saved by Interstate 87 | 3.391 | (.633) | 5.357 |
| **Zoning Characteristics:** | | | |
| Percent Zoned Low Intensity | 0.070 | (.033) | 2.103 |
| **Constant** | -6.413 | (3.930 | -1.632 |

**R Square = .768** **Standard Error = 3.019**

**N = 456 (57 towns, 8 time periods)**

**F = 97.286**

Table A.14 -Predicting Annual Appreciation Rates: Towns Outside Park, 1963-1983

| | Coefficient | (Standard Error) | T-test |
|---|---|---|---|
| **National Economic Trends:** | | | |
| Boeckh Construction Cost Index | 2.816 | (.146) | 19.320 |
| Treasury Bills Interest Rate | -1.550 | (.146) | -10.629 |
| Federal Reserve Interest Rate to Banks | 0.780 | (.107) | 7.269 |
| **Demographic and Development Indicators:** | | | |
| Log of Taxbase ($ millions) | -5.214 | (.284) | -18.389 |
| Number of Parcels (000) | 1.384 | (.369) | 3.751 |
| Rate of Change of Population | 47.147 | (13.486) | 3.496 |
| Average Parcel Size (acres) | -0.038 | (.038) | -2.441 |
| **Physical Characteristics of Towns:** | | | |
| Miles of Road per Square Mile | 3.317 | (.737) | 4.502 |
| Area in Square Miles (100) | 5.463 | (1.246) | 4.383 |
| **Characteristics of Location:** | | | |
| Washington County | 1.450 | (.543) | 2.673 |
| **Constant** | -51.191 | (13.521) | -3.786 |

**R Square = .677** **Standard Error = 3.191**

**N = 384 (48 towns, 8 time periods)**

**F = 78.344**

Table A.15 Predicting Annual Appreciation Rates for 132 Towns: 1973-1983

| | Coefficient (Standard Error) | | T-test |
|---|---|---|---|
| **National Economic Trends:** | | | |
| Rental Consumer Price Index | -0.715 | (.329) | -2.172 |
| Recreational Spending Index | 2.262 | (.593) | 3.811 |
| **Demographic and Development Indicators:** | | | |
| Log of Taxbase ($ millions) | -3.306 | (.326) | -10.138 |
| Number of Parcels (000) | 0.709 | (.211) | 3.351 |
| **Physical Characteristics of Towns:** | | | |
| Miles of Paved Road | 0.030 | (.007) | 4.149 |
| Miles of Shoreline | 0.017 | (.008) | 2.079 |
| **Characteristics of Location:** | | | |
| Clinton County | -2.855 | (.536) | -5.328 |
| St. Lawrence County | -1.417 | (.396) | -3.577 |
| Hours saved by Interstate 87 | 1.291 | (.453) | 2.854 |
| **Zoning Characteristics:** | | | |
| Locally Adopted Zoning Plan | 1.076 | (.300) | 3.587 |
| **Constant** | -2.842 | (8.134) | -0.349 |

**R Square = .576** **Standard Error = 2.890**

**N = 528 (132 towns, 4 time periods)**

**F = 70.125**

Table A.16 Predicting Annual Appreciation Rates: Towns Inside Park, 1973-1983

| | Coefficient (Standard Error) | | T-test |
|---|---|---|---|
| **National Economic Trends:** | | | |
| Recreational Spending Index | 2.115 | (.781) | 2.708 |
| Rental Consumer Price Index | -1.065 | (.434) | -2.455 |
| **Demographic and Development Indicators:** | | | |
| Log of Taxbase ($ millions) | -3.306 | (.326) | -4.542 |
| Population per Housing Unit | -0.799 | (.248) | -3.224 |
| Number of Parcels (000) | 0.709 | (.211) | 2.083 |
| **Physical Characteristics of Towns:** | | | |
| Miles of Paved Road | 0.030 | (.013) | 2.267 |
| **Characteristics of Location:** | | | |
| St. Lawrence County | -1.924 | (.675) | -2.849 |
| Hours saved by Interstate 87 | 2.242 | (.680) | 3.294 |
| **Zoning Characteristics:** | | | |
| Locally Adopted Zoning Plan | 1.244 | (.390) | 3.189 |
| **Constant** | -2.141 | (10.730) | -0.200 |

**R Square = .615** **Standard Error = 2.535**

**N = 228 (57 towns, 4 time periods)**

**F = 39.758**

Table A.17 Predicting Annual Appreciation Rates: Towns Outside Park, 1973-1983

| | Coefficient (Standard Error) | | T-test |
|---|---|---|---|
| **National Economic Trends:** | | | |
| Rental Consumer Price Index | -1.211 | (.277) | -4.367 |
| **Demographic and Development Indicators:** | | | |
| Log of Taxbase ($ millions) | -7.735 | (.850) | -9.100 |
| Number of Parcels (000) | 2.713 | (.501) | 5.417 |
| Average Parcel Size (acres) | -0.093 | (.026) | -3.584 |
| **Physical Characteristics of Towns:** | | | |
| Area in Square Miles (100) | 6.068 | (1.956) | 3.102 |
| Miles of Road per Square Mile | 2.593 | (1.171) | 2.214 |
| **Characteristics of Location:** | | | |
| Hours saved by Interstate 87 | -2.716 | (.716) | -3.568 |
| **Constant** | 33.131 | (2.851) | 11.622 |

**R Square = .647** **Standard Error = 3.013**

**N = 192 (48 towns, 4 time periods)**

**F = 49.540**

Table A.18 Average Annual Appreciation by Town Type and Period: 1963-1983

| Period: | Average Annual Appreciation (Standard Deviation) | | | |
|---|---|---|---|---|
| | Town Type | | | |
| | Inside (n=57) | Split (n=27) | Outside (n=48) | Total (n=132) |
| 1963-68 | 5.21 (2.60) | 4.10 (1.73) | 4.42 (2.28) | 4.69 (2.37) |
| 1965-70 | 9.19 (3.17) | 66.97 (2.71) | 6.92 (3.23) | 7.91 (3.28) |
| 1968-73 | 17.16 (5.64) | 14.55 (5.90) | 13.09 (4.87) | 15.15 (5.69) |
| 1970-74 | 18.13 (5.78) | 16.82 (5.31) | 15.65 (5.99) | 16.96 (5.82) |
| 1973-76 | 11.90 (3.89) | 12.20 (4.09) | 13.49 (5.79) | 12.54 (4.70) |
| 1974-78 | 8.36 (3.04) | 8.05 (3.58) | 9.61 (3.93) | 8.75 (3.52) |
| 1976-80 | 6.32 (2.37) | 7.97 (3.25) | 7.05 (2.54) | 6.93 (2.67) |
| 1978-83 | 4.58 (1.95) | 5.51 (1.84) | 4.88 (1.92) | 4.88 (1.94) |

# ADIRONDACK PARK LOCAL GOVERNMENT REVIEW BOARD



LOON LAKE, NEW YORK 12968
(518) 891-2753
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ANTHONY N. D'ELIA
EXECUTIVE DIRECTOR

March 28, 1988

Subject: Adirondack Park Zoning: Property Values & The Tax Base-1963-1983

Mr. Peter A. Wissel, Dir.
Real Property Tax Research
Div. Equalization & Assessment
Agency Building No. 4-Empire
State Plaza
Albany, N.Y. 12223

Dear Mr. Wissel:

On July 1, 1986 you and your staff met with the Advisory Committee and presented your preliminary findings on the research program you were carrying out.

According to my records, 9 of the 15 advisory committee members made critical suggestions and offered constructive suggestions for the Final Draft.

I have reviewed your final draft without finding any of our criticisms or suggestions incorporated therein.

As a matter of fact, I can only attribute this to what may be E & A's zeal in protecting the status quo of Adirondack Private Land Use Zoning. There was further evidence of this when your board released a premature and truth-stretching report claiming that APA zoning has increased Park Land Values. True, there was an increase in land values in the least severely zoned designations ( 1.2 and 3.2 acres for a single family home) which accounts for less than 10% of private land. This also accounts for more than 90% of Lakefrontage and Riverfrontage, the only land that is greatly in demand.

What this preliminary draft failed to even hint at was that on 90% of the private land in the Park, the most severely zoned at 8.5 and 42.7 acres for a single family home, there was negative appreciation, as you put it. This Resource Management and Rural Use designation dropped in value. This point will be covered later on in this letter as we find the Final Draft strives desperately to lead a casual reader to the same conclusion.

But, first, let us get to your methodology, and the conclusions drawn, very often broad and most often based on narrow information, or improper sampling.

1. We refuse to accept the " logic" of a comparative study of land values based on using inside and outside the park land sales. We should expect similarities in the 32 towns both inside and outside the park, and in the towns on the perimiter of the blue line outside the park.

   Although land within the park is zoned by the APA and land outside the Blue Line may or may not be zoned, they are both within the same socio-political, taxing and economic sphere , with similar values and appreciation.

2. Further , excellent corroboration would have been a field study of town assessors and real estate brokers within the Blue Line, and on the Perimiter, in addition to your computer analysis of sales over a twenty year period. This would have taken you out of the realm of esoteric statistics and subjective analysis and given you some field service, actual practise truths.

3. On Page VIII of your Executive Summary, you state:-

   "Overall, the search for zoning costs, attributable to the enactment of the Adirondack Park Land Use and Development Plan does not produce substantial evidence that they exist."

   Apart from the fact that "substantial evidence" is a broad statement, this statement is without a doubt absurd and contradicts your repeated statements and findings throughout your report.

   On eighteen pages of this report it is clearly shown that10% of the land , zoned least restrictively by the APA has had considerable appreciation, while 90% of the land has depreciated in value( zoned severely).

   What you also fail to mention is that this 10% of the land is almost all lakefront and river front. A brief look at the APA Color Coded Density Map will show you that the Red and Orange is found predominantly around lakes for Red and Rivers for Orange ( 1.2 acre zoning and 3.2 acres zoning).

   These two designations account for most of the development and sales since 1973, and have increased considerably in value, but account for only 10% of the privately owned Park Land.

Here are just a few, " within context" quotes from your final draft study:-

Page VI -- There are negative effects for places with a considerable proportion of Rural Use and Resource Management zoning ( 8.5 and 42.7 acres for a home resp.)

VIII - There is a premium attached to lands with the Moderate Intensity Zoning class(1.2 acres)

8 -- Vacant Parcels zoned Moderate Intensity (1.2 acre), the lowest acreage required for a residence, except for Hamlets, tended to increase in price.

30 -- Smaller parcels command a larger price per acre.

30 -- Parcels near water sell for 66% more than similar parcels away from water.

34. Higher prices were paid for land in the Moderate Intensity (1.2 acres) since zoning controls were adopted in 1973.

55. The Low intensity ( 3.2 acres for a home) APA density category had a higher appreciation rate tha did other parts of towns with the Park.

62. There is a substantial premium attached to parcels near water.

63. When comparing parcels zonedResource Management (42.7 acres) a significant differen of minus 10% is only present when a weakened statistical test is applied !

66. The combined percentage of 42.7 acre Resource Management and 8.5 Rural Use show an APA zoning related "costs" to the landowner of an amount greater than observed outside the Park.

As to your analysis of the Tax Base of Adirondack Towns as affected by APA Zoning:-

a. On Page 27 of your report you state, " Recent measurements of assessment uniformity in the state have shown that some of the worst assessing practises in New York occur within the Study Area."

Yet, you do not hesitate to use these assessment figures and claim that the town tax Bases have increased and are not affected b y APA zoning.

To our knowledge, practically none of the towns have re-assessed land based on its APA density zoning. Until this is done, there is little value in your position.

b. It is our position that the increasing tax base falls on fewer and fewer taxpayers-- you failed to analyse this possibility.

c. There is no comparison or study drawn on state land, Resource Management Land and Hamlet acreage from town to town. These factors can seriously affect the tax base appreciation of both state and private tax land assessments.

d. The Town Tax Base studies in this report are unacceptable

It is a sad commentary on this day and age in New York State when the politics, not the facts, determine agency studies. Surely, someday, a critic will pick up the 1973-75 E & A Study on Land Values within the Park and this Study and see the spuriousness behind both of them. At least, I hope so.

Anthony N. D'Elia
Executive Director

and/mh
cc: All Review Board Members
cc: All Adirondack Legislators
cc: Complete Board of Directors of The State Board of Equalization and Assessment
cc: The Press and Media