# RENTAL HOUSING DATA BASE

by

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## Introduction

Three sets of rental housing data were collected, of which two sets are primary data--data on land use and housing regulations and activities, and sale and resale data of residential income properties. The regulation data covering 18 regulations and activities were obtained by a mail survey of planning directors of 15 cities of Alameda County, 36 cities in Los Angeles County and 14 cities in Santa Clara County. The residential income property resale data were obtained from the Los Angeles County Assessor for 9 cities. As a third data set, data on residential rent and housing and community characteristics for the cities in the three counties were developed from the 1970 and 1980 Census of Population and Census of Housing. The law file data are presented in Tables 1, 2, and 3 sale-resale data in Table 4; and rent, housing and community data in Table 5.

These data sets are analyzed statistically in two separate studies to estimate the extent to which the legal environment, i.e., rent control and housing and land use regulations and government activities, affected residential income property values on the one hand, and rents paid by residential tenants on the other. In the first study, using microdata of

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property sales in 1976-78 and resales in 1981, we examine the effects of the legal environment on residential income property values. In the second study, using data aggregated at the city-wide level, we analyze the effects of the legal environment on rent level changes between 1970 and 1980.

The General Model

For testing hypotheses about the effect of the legal environment on residential income property values on the one hand and on rents on the other, a general model can be presented algebraically in the following form:

$$D = f(A,B,C,I) \tag{1}$$

where,

D is a dependent variable which in the first instance represents the annualized change in the value of residential income property, and in the second instance the 1970-80 change in rent paid by residential tenants,

A is change in housing characteristics,

B is change in community characteristics,

C is change in the legal environment, and

I is inflation rate.

We next discuss the four righthand variables:

**A.** Housing characteristics are clearly main determinants of the price of housing whether in terms of property value or rent. Thus, we would want to include any changes in the major characteristics, whenever we compare sets of data pertaining to the identical property at 2 different times, e.g., before and after a change in legal environment.

**B.** Community characteristics are used to reflect housing demand and supply conditions. We would want to include as many variables as possible to give expression to these conditions as well as to variables which reflect imbalances in demand and supply. An example of the latter are vacancy rates.

Surely, each community does not function as a distinct housing market; there is significant overlap and substitutability especially within broad geographic areas. Nevertheless, the fact that individual cities have a good deal of power in determining the nature of their communities (e.g., through public expenditure decisions, housing and land use regulations, etc.), suggests that people would have a preference of one city over another. Demand and supply conditions do exist within a particular community, though that community may be subsumed in a larger, more encompassing housing market.

C. Two law variables are of particular interest. One is a dummy variable testifying to the presence or absence of rent control. The second law variable will be designed to reflect the general regulatory climate within the particular city. By regulatory environment we will mean the extent to which housing and land use is regulated and government activities support housing and land use.[1] In a sense, the intent is to reflect the activism of local government in relation to housing and land use.

I. Since during the period under analysis inflationary conditions prevailed, and they directly affected property values and rents, a variable reflecting the inflation rate needs to be included in the equation whenever the time intervals of observations are not identical.

## The Rental Income Property Value Change Model

The first study analyzes the effect of the legal environment on residential income property values. In a residential housing market, the market value of residential income property is commonly assumed to be based

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[1]Examples of government activities in support of housing and land use are a redevelopment agency and a specific plan.

on its expected future net income stream. Specifically, the market value of property in period t will tend to equal the discounted stream of expected net returns over its life. Landlords will seek to maximize this stream by selecting appropriate levels of repair and maintenance on the one hand, and types of tenants who will pay high rents, have low probabilities of delinquency, and minimize wear and tear on the apartments, on the other.

These decisions by landlords can influence both variable cost and the rent charged. The fixed cost, which includes mortgage payments, insurance and taxes, cannot in most instances be affected by the landlord.[2] In line with these considerations, the annualized percentage change in property values can be expressed as follows:

$$V = \sum_{t=o}^{\infty} (R_t - FC_t - VC_t)(1+i)^{-t} \qquad (2)$$

where,

V = annualized percentage change in property value between sale date (s) and resale date (r),

$R_t$ = rent charged tenant in period t,

$FC_t$ = fixed cost in period t, and

$VC_t$ = variable cost in period t.

We will next consider the broader setting of equation (1) within which equation (2) can help explain changes in property values. Market supply and demand conditions surely have a significant influence on the values of residential income properties. Therefore, we will seek to isolate the differences in the demand and supply of rental housing among the

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[2] In periods in which mortgage rates decline sharply, a landlord will seek to refinance fixed-rate loans, a step, if successful, would make mortgage payments a one-time variable cost.

communities, so as to capture the effects of rent control. Since this study is concerned with changes in property values over a five year period, changes in demand and supply parameters as well as their levels need to be examined. In the rent capitalization framework, the expected future flow of revenues from rental properties determines their values. In modelling the housing market, we seek those demand and supply factors which influence the expected future income stream, and thus the value of rental properties.

The market factors can be divided into two general categories. First, we consider the characteristics of a community that influence the costs of building and maintaining residential income properties. These include, among others, the level of property taxes as well as the amount and type of housing and land use legislation prevalent in the community. In communities with strict building codes, for example, it may be more expensive to maintain properties than in communities without codes. Since all the communities examined are in the same metropolitan area, such factors as labor costs, which are not expected to vary over communities, are not considered.

The other way in which market conditions influence property values is through their influence on the returns a property is expected to yield. Values should be expected to grow faster in growing communities with increased employment opportunities and wealthier populations, and vice versa. The levels of wealth, population density and employment may also affect the relative growth rates of values, though the directions of the influences are not known *a priori*. Changes in the tastes of people for certain types of housing should affect values. Characteristics including location, size, and architectural style should be, whenever possible, incorporated into an analysis of the determination of housing value changes. And changes in community amenities and services, brought about by changing government expenditures, should influence housing values.

Besides these basically demand-side characteristics, expected returns on individual properties are also influenced by the expected supply of housing in the community. Tighter government legislation on the construction of new properties should cause values to increase more rapidly. Together, these demand and supply factors cause values to grow more rapidly in some communities than others. If possible, we should try to incorporate all of these characteristics into the study. Yet, due to limitations in the data as well as the number of observations, we have used a more limited set of variables to try and capture the divergence in market conditions prevailing across communities.

The legal environment can affect the functioning of the rental housing market, and thereby the prices and quantities of rental housing services as well as the value of residential income properties. As was mentioned earlier, we will divide the legal environment into two major classes -- rent control ordinances and the general regulatory environment.

Clearly, rent (R) is a function of the quantity of housing services offered, which are related to expenditures on maintenance and improvement. The relationship between rent (R) and variable cost (VC) may work in the opposite direction as well. It is likely that a landlord chooses a level of housing services which maximizes his expected income. If, rent control restricts rents to below market clearing levels, the landlord may decide to reduce expenditures. He may lower the quantity of housing services offered to tenants by reducing repair and maintenance, so that restricted rents approach free market levels.

Any reductions in expenditure would appear to devalue the net worth of the property. Yet, because the below-market level rents engender excess demand, a rent control ordinance gives the landlord more flexibility in choosing prospective tenants. By selecting smaller families or even families without children to occupy the units, depreciation (and thereby cost) can be reduced. And by choosing wealthier tenants who are better able to maintain and upgrade their apartments, the building owner may be able to reduce the quantity of housing services he supplies without markedly diminishing the services offered by the property, if the tenants choose to make improvements. Greater choice should also lessen the problem of nonpayment of rent relative to an uncontrolled market.

Furthermore, the effect of a rent control ordinance depends upon the stringency of the law and its perception by the public. Remember that the value of a residential property is determined by the expected future stream of earnings it will yield. Consequently, a rent control law which restricts present earnings but is not expected to persist into the future, or contains loopholes which will enable property owners to circumvent its intent, is likely to have only a minor effect on property values.

There is also the issue of timing, i.e., when the effects of rent control and regulatory environment will impact on property values, and, if so, by how much. Based on an empirical study of the timing of the effect of Proposition 13 on interest costs of California municipal bonds, we would expect the effect to be strongest immediately following the change in the legal environment.[3] The main reason for this time path is that publicity about a new law tends to produce a strong immediate reaction. But, as time goes on, enterprising landlords often find ways to work around the new legal

[3] Werner Z. Hirsch, "Revenue Limitation Measures and Their Effects on Municipal Bonds: The Case of California Municipalities," Proceedings of the 40th Congress of the International Institute of Public Finance, (Detroit: Wayne State University Press, 1986), pp. 293-308.

restrictions and make effective changes in their production functions.

In sum, though a restrictive rent control ordinance, which causes rents to significantly diverge from their free market levels, will reduce the profitability of owning rental property, there do appear to be mitigating factors which, in some cases, could markedly reduce these losses.

Contrary to the enactment of rent control, the enactment of laws which extend the government's control over land use and housing and which provide government activities to support housing and land use, do not have an unambiguous effect on property values. Depending upon the exact nature of the regulatory environment, the restrictions could either increase or decrease the net worth of residential properties. Consequently, we have no prior belief on how an increase in the number of housing and land use regulations and government activities is likely to affect property values.

Econometric Analysis of Property Value Change Model

As was mentioned above, the most promising way of testing hypotheses about the effect of changes in the legal environment on property values is to use microdata, i.e., pairs of sale and resale data of identical properties. We were able to obtain data taken from the roll of the Assessor of Los Angeles County for nine middle-sized cities. One of the nine communities is Santa Monica, which in 1979 enacted a stringent rent control ordinance. All sales data are for the years 1976-78, while all the recorded resales occurred in 1981. This set of observations is not a sampling; it includes all of the sales/resales that occurred in these communities during these years.[4] The total number of observations was 41. Six of these

[4]Although the set of observations includes all of the transactions for the given years and as such does not constitute a sampling, under different circumstances an infinite number of possible outcomes could have occurred.

properties had no structures on them and were eliminated. An additional three observations showed changes in value completely out of line with the rest of the data set. We concluded that radical positive changes reflected major upgrading and the negative changes may have resulted from unusually rapid deterioration, possibly caused by fire. Without detailed information about these three properties, particularly any capital investment or divestment that had occurred, it was impossible to control for these major changes. Consequently, we decided to eliminate these three observations, reducing the final number of observations examined to 32.

We constructed the empirical specification in the context of the earlier presented general model (1). In specifying the functional relationship to be tested, we chose to use the annualized relative change in property value as the dependent variable. We hypothesized that any changes in the legal environment would affect the per unit of housing services revenues of residential income properties. As a result, examining relative rather than absolute changes was more appropriate, since relative change implicitly accounts for any variations in the level of housing services offered by different properties. The algebraic formulation of the dependent variable is:

$$V = 100 * ((CR/VS)^{1/\Delta t} - 1) \qquad (3)$$

where:

V - annualized percentage change in property value between sale date (s) and resale data (r),

CR - property resale price,

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Consequently, we maintain the assumption that the observations are derived from a normal distribution.

VS = property sale price, and

$\Delta t$ = length of time between sale and resale ($\Delta t = r-s$).

As explanatory variables, in line with equation (1), we considered housing characteristics, the legal climate and the inflation rate.

In the general equation (1), A represents housing characteristics and their possible changes. However, since we use pairs of sale/resale data for the identical property over a relatively short time span, no information on housing characteristics is included.[5]

It is also quite possible that certain types of structures would become relatively more or less valuable over time, indicating that the levels of certain characteristics and not just their changes over time were important. To examine hypotheses of this type, we will include dummy variables in the equations and analyze whether certain types of residential income properties appreciate more rapidly than others.

Data on the community characteristics should reflect differences in demand and supply conditions that existed across communities. On the demand side, we examined the following variables: annualized growth rate of population; annualized growth rate of per capita income; annualized growth rate of government expenditures, (a proxy for the quality of community amenities assumed to be a complement to housing); and annualized growth rate of local employment. We also looked at several characteristics which reflect supply conditions. These include: per capita property taxes collected (PCTAX), and per capita assessed valuations (PCASS), which reflect the value of housing in an area. Last we included two variables which reflect the tensions in the individual markets: vacancy rates (VAC) and

[5]As mentioned earlier three outlying values which possibly involved major housing quality changes were dropped.

average travel time to work (ATT).

Changes in legal environment are represented by two variables: the first, LC, reflects the general regulatory climate which prevailed in 1981 in the nine cities examined in the study. Since we identified 16 housing and land use regulations and housing and land use related government activities, this variable can range from 0 to 16. Admittedly, we did not know how to weight the different regulations and activities; nevertheless, a value of LC which approaches 16 almost surely reflects a highly regulated community. This variable is not only interesting for its own sake, i.e., to test hypotheses about whether an active regulatory environment is associated with relatively smaller or larger value increases, but it also fulfills an additional role. Specifically, this variable acts as a control variable. Only if LC is not highly correlated with the rent control variable (described below) could we conclude with some confidence that a high correlation (should such be found in the analysis) between property value changes and the presence of rent control, is directly related to rent control. Otherwise, rent control might merely serve as a proxy for the general regulatory environment.

We used a 0-1 dummy for the rent control variable (LR): 0 signals absence of rent control, 1 means a rent control law was in effect. If the study had included more than one community with rent control ordinance, we would have used a more complex specification which reflected the relative stringencies of the various rent control laws. Of particular importance are the degree to which rent increases are restricted to below rises in the price level, and whether the law allows for vacancy decontrol granting landlords greater freedom to raise rents of new tenants.

The final group of variables reflect the effects that different holding periods between sale and resale (GAP) have on the annualized changes in property values (V). Since the annualized rate of inflation (INF) should be positively correlated with the change in value, the coefficient on INF should have a positive sign. It is also quite likely that properties held for different lengths will show different value increases for reasons other than changes in the inflation rate. Different market conditions could exist during these longer holding periods, or people who hold property longer may do systematically better in the market by accruing more information. We include the variable GAP, the difference in time between sale and resale, to try to capture these effects.

## The Empirical Results

The final model specifications and results are presented in Table 5. In the empirical work we found that several of the community characteristics had negligible effects on changes in property values; consequently they were omitted from the specification. In addition, two of the community characteristics, i.e., change in government expenditures and changes in population were dropped due to problems of multicollinearity. We omitted these variables in order to improve the fit, with the understanding that if we omitted relevant variables, we may have biased the results.

We also tested for market segmentation based on the number of dwelling units in the rental property by including a 0-1 dummy variable to separate one and two unit apartment buildings from larger ones. The coefficient was insignificant even at the 10% level. Consequently, no variables relating to housing characteristics appear in the final specifications.

In the end, we decided to present three capitalization equations. All include a rent control variable (LR), a general regulatory climate variable (LC), as well as an inflation variable (INF), and a variable indicating the time elapsed between sale and resale (GAP). With regard to community characteristics and tension in the housing market, respectively, the equations contain per capita assessed valuation (PCASS) and/or per capita property taxes (PCTAX), as well as average travel time to work (ATT) and/or vacancy rates (VA).

All equations exhibit relatively high degrees of explanatory power, with an $R^2$ falling between 0.56 and 0.60. Most importantly, the results confirm our chief hypothesis: rent control does appear to decrease the appreciation rate of residential income property values. In every specification, the rent control variable is shown to be statistically significant at the five percent level, using a one-tailed test.

The magnitude of the effect of rent control varies somewhat among the equations. In the three specifications, the existence of rent control is shown on average to be associated with an annualized decline in property values of between 7.3% and 11.9%, *ceteris paribus*. As stated earlier, we can be confident that the LR coefficient is actually capturing the effects of rent control only if it is uncorrelated with LC. The simple correlation coefficient between these two was 0.45, indicating that the two law variables are not highly correlated. The coefficient LC has a positive sign in all equations, though it is significant only in equation (2).[6]

Apart from the variables describing the legal climate, the results on the other variables also offer some insights into the functioning of the market. INF has magnitudes ranging from 8.8 to 9.6, suggesting that a one percent increase in the inflation rate tended, on average, to be associated

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[6] A possible explanation is that values increased more in highly regulated housing markets because the legislation tended to favor owners of residential income property.

with an increase of the annualized changes in relative property values of about 9 percent. GAP was also positive and significant in each equation. There are several conceivable explanations for this result. First, even controlling for inflation, it is possible that in the additional time periods in which properties with a long lag between sale and resale were held, values increased more rapidly. Second, owners who waited longer before selling got higher prices, which are reflected in larger annualized gains in value. The results as presented do not contain enough information to choose between these or other possible explanations.

The signs on PCASS were positive, while those on PCTAX were negative, (though in only a few cases are the results for either coefficient shown to be significant). These results suggest that in communities where there is more valuable property per capita, values increased relatively more than elsewhere. Conversely, where property taxes are higher, relative values increased less rapidly.

The tension variables were generally not significantly different from zero: VAC was positive but insignificant in the two equations in which it appeared. Apparently the absolute tightness of the housing market did not alter the rate at which values increased. ATT was negative in all specifications, suggesting that in markets in which people commute longer distances to work, values increased relatively less rapidly.

## Rent Control Model

The second part of this study examines the effect of rent control on rent levels in 59 cities in the state of California. The common presumption is that, once a jurisdiction enacts a rent control law, rent increases will be smaller than they would be otherwise. This indeed is the objective of rent control legislation. Yet, if the law either contains loopholes which allow landlords to circumvent the rent control restrictions, or is not carefully enforced by the local authorities, it may in actuality have little impact on rent levels. Consequently, lower rent levels do not follow automatically from the passage of rent control legislation.

This section starts by showing that even in Berkeley, which has a strong commitment to rent control, the law apparently is not enforced with great care. Next, we present the empirical results, based upon the general model of equation (1).

Part B, Section 8 of the City of Berkeley Initiative Measure G of 1982 requires that all landlords file with the Rent Stabilization Board on September 1 of each year a rent registration statement that spells out the rent charged for each and every apartment under his or her control. Landlords were legally permitted to increase rents between 1981 and 1984 by a total of 19.9% if they did not provide any utilities, and by 27.3% if they provided all utilities.

An examination of the files reveals that a number of landlords did not take full advantage of the allowable rent increases. This was especially common among owners of duplexes and other small apartment houses. Conversely, a significant number of landlords actually reported rent increases in excess of the permitted amounts. Owners of larger apartment buildings tended to dominate this group.

Both the fact that many owners did not increase their rents as much as was permissible, and the fact that a number of other landlords openly exceeded the limitations, suggest that the rent control ordinance in Berkeley was not a very effective means of maintaining rents below their market levels. This would be a very damaging claim to supporters of rent control, since the Berkeley rent control ordinance has generally been acknowledged to be as stringent and as politically well supported as any in California. The electorate of Berkeley first passed a rent control charter amendment in 1972, which, however, was held to be unconstitutional by the California Supreme Court in 1976.[7] In 1978, citizens of Berkeley passed another rent control law, the Renter Property Tax Relief Ordinance, which was amended in 1979, 1980 and 1982. Other municipalities in California that passed rent control legislation only did so in the late 1970s. The law in Berkeley is strict and the political commitment to rent control has been evidenced. If rent control is not effective in Berkeley, it is doubtful that it would have much impact in other cities in California.

Econometric Analysis of Rent Change Model

As a preliminary test of the impact of rent control, we compared the 1970-80 changes in the mean value of rents in Berkeley with those in two other groups of cities. First, we tested whether the mean change for Berkeley was significantly lower than that found for 51 cities that had no rent control ordinance. Second, we compared the mean change in Berkeley with that of six cities that had rent control laws, albeit ordinances lacking the stringency and long-term commitment of the Berkeley law. In both instances, the results show that the change in the mean value of Berkeley rents was significantly lower than that of the other cities.[8]

These preliminary results offer some evidence to support the belief that rent control did have a chilling effect on rent increases. Yet these

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[7] Birkenfeld v. City of Berkeley, 17 Cal. 3d at 165,550 P.2d at 1027, 130 Cal. Rptr at 491 (1976).

[8] When mean rent increases in first generation rent control cities were compared to second generation cities, the t statistic was equal to 1.97, which testifies to a statistically significant difference at the 5% level. The difference between first generation and no rent control had a t-value of 8.9 and was statistically significant at a 1% level.

simple tests do not control for other changes which may also account for rent changes. In other words, it may have been other factors which caused rents in Berkeley to increase more slowly than in other places. In order to better isolate the real impact of rent control, we use multivariate regression analysis to control for the influences of other factors.

The data available to implement the rent change model come from the Census of Population and Census of Housing for 1970 and 1980. We used information aggregated at a community-wide level for 59 cities. (The data are presented in Table 6.) As in the capitalization analysis, we structured the rent change specifications within the paradigm of equation (1). Since we use microdata, it is imperative to incorporate into the analysis the changes in community and housing characteristics that occurred between 1970 and 1980. The inclusion of these characteristics should reflect the changes in demand and supply conditions which occurred in the various communities.

A variety of community demographic, economic and housing characteristics were considered to describe the dynamics of the housing markets in the various communities. On the demand side, increases in population, per capita income or the employment rate would be expected to raise the demand for rental housing units, and thus exert an upward pressure on rents. In addition, a variable reflecting proximity to the beach was included on the argument that beach-front locations had become relatively more valued in the 1970s.

Certain housing characteristics reflect supply condition changes: An increase in the average number of persons per room is likely to increase the depreciation rate and therefore costs, causing landlords to increase rents. More rooms per rental unit tend to raise rents, as larger apartments are more expensive. And a decline in quality, represented by an increase in units without plumbing, reduces rents.

Last, there are two community characteristics which reflect the stability and tension of the housing market as a whole. Higher turnover rates and increased vacancy levels reflect a looser, less stable housing market. More vacancies should exert a chilling effect on rent increases, while higher turnover rates may serve as a proxy for neighborhood characteristics which, because they increase instability, also exert a downward effect on rents. There is one qualification to the last statement. In areas with highly mobile populations, e.g., students or an area undergoing urban renewal, stability of tenants may be a poor indicator of neighborhood quality.

The rent change equation in its most elaborate form includes 4 housing characteristics, 5 community characteristics 2 tension and 3 legal variables. The notations and definitions are as follows:

A. <u>Housing Characteristics</u>

MRRCH is change in median number of rooms per rental unit

MPRCH is change in median number of persons per rental unit

AVPRC is change in number of persons per room

RULPC is change in percentage of ental units lacking plumbing

B. <u>Community Characteristics</u>

UECH is change in unemployment rate

POPCH is percentage change in population

POICH is percentage change in per capita income

PROUC is change in percent of rental units

MILE is average miles to beach

<u>Tension Variables</u>

MOVCH is change in percentage of rental units moved in during 1969-70 vs. 1979-80

VACCH is change in rental vacancy rate

C. Legal Environment

LR (Dummy for presence) (1) or absence (0) of rent control

LC is regulatory environment in terms of the number of housing and land use regulations and activities in a jurisdiction.

DU is a dummy for non-Los Angeles cities, a proxy for the general conditions and legal climate of Los Angeles County in Southern California, and Alameda and Santa Clara Counties in Northern California, respectively.

## The Empirical Results

Several of the community and housing characteristics were not shown to significantly affect the change in rent. Consequently, we decided to present two functional specifications, one in which all the variables are included (equation A), and a second which excludes many of the insignificant variables (equation B). The results are listed in Table 7.

Both rent change equations exhibit relatively high explanatory power, with $R^2$ values of 0.64 and 0.56, respectively. The F-values are correspondingly high.

The most important econometric finding is that the rent control variable did not have a statistically significant effect on the 1970-80 percentage rent changes in the 59 cities in Alameda, Los Angeles and Santa Clara counties. This appears to refute the results of the simple mean test performed above. However, a direct comparison of the results is not possible, since the above results contrast Berkeley with the other cities, while in the regression equations, all cities with rent control are lumped together. Because only Berkeley had a stringent rent control ordinance for a number of years, we could not test explicitly for the effects of a stringent control on rent changes due to a lack of variation over the sample, i.e., a dummy variable in which the value different from zero only for the city of Berkeley. Even including Santa Monica as a second strictly controlled market does not generate enough variation to examine the significance of the variable. Consequently, we are able to conclude that in California, rent control in general does not appear to have a statistically significant chilling effect on the rate of rent increases. However, the preliminary results do suggest that a very strict ordinance, like those in Berkeley and Santa Monica, may restrict the change in rents.

The variable reflecting regulatory environment was also found to be insignificant. Conversely, the coefficient of the dummy variable for Los Angeles County showed that rent increases in cities located in Los Angeles County were approximately 24% higher than those in Alameda or Santa Clara counties. It is quite likely that this dummy variable captured some of the differences in legal climate among the countries which would contribute to varying rates of rent increases.

Two of the housing characteristics were shown to have significant effects on the change in rents. The higher the median number of rooms per rental unit, the greater on average the magnitude of the rent change. And as the average number of persons per room rose more quickly, rents on average also went up more. This can be due to the greater depreciation, and consequently costs incurred by the landlord, due to higher occupancy rates, costs he will seek to pass on to consumers of rental housing.

Of the community characteristics, two were found to significantly affect the rate of rent change. Increases in the rates of per capita income and population growth, both indicative of faster growing demand for housing, had positive influences on the growth rate of rent increases.

Lastly, none of the tension variables had a significant impact on the rate of change in rents. It was particularly surprising that the change in vacancy rates was not shown to be inversely related to the change in rents.

## Summary and Conclusion

Three kinds of California rental housing data were collected and presented in tables. The land use and housing regulations and activities data for 65 cities in Alameda, Los Angeles, and Santa Clara counties were obtained by a mail questionnaire sent to city planning directors. They constitute an invaluable law file of these three California counties.

For 9 cities in Los Angeles County, sets of residential income property sale/resale data were collected (an effort undertaken, to the best of our knowledge, for the first time anywhere). Finally, for all 59 cities data on residential rents, housing characteristics and community characteristics were developed and presented in a table.

Data from these tables were used to test hypotheses about the effect of changes in the legal environment on residential income property values using a capitalization model. Second, a rent change model was used to examine the effects of the legal environment on rents paid by residential tenants.

The results of these two econometric studies can be summarized as follows -- when 9 cities in Los Angeles County were analyzed, the presence of rent control in one of them, i.e., Santa Monica, was found significantly associated with a decline in the value of residential income property between 1976 and 1981. The annual effect was quite substantial, i.e., somewhere between 7 and 12 percent. However, the association between the regulatory environment and property value changes is less clear. In all equations, the relationship is positive, but quite small and often statistically insignificant.

An econometric rent change analysis of 59 cities in Alameda, Los Angeles and Santa Clara counties examined the relationship between rent control and rents paid by residential tenants. A variety of specifications of the rent change equation consistently finds no significant relationship between rent control and rents, and the same holds for the relationship between the regulatory climate and rents.

While we must be careful in seeking to combine the results of the capitalization and rent change models, the econometric results tend to suggest an interesting conclusion. The reason care is required stems from the fact that in one instance only 9 cities in Los Angeles County were subjected to econometric analyses, while in the second instance 59 cities in three California counties were studied. Moreover, in the first study, the sole city with rent control had one of the most stringent types of control, whereas in the second study cities had rent control laws with various degrees of stringency. More importantly, except for Berkeley, cities with rent control had such an effect only during the last year or two of the ten year period under investigation. Thus, one could not expect great effects. Yet, a simple significance test of the difference of the mean 1970-80 rent increases in Berkeley and the other cities indicates that Berkeley's increase was significantly smaller. We must remember that this analysis is distinctly inferior to the regression analysis which partials out the effect on rents associated with a select number of other factors.

Should we conclude that rent control does not significantly reduce residential rents, while stringent rent control has a significant negative effect on residential income property values, an interesting possible implication emerges. Perhaps investors assume implicitly that rent control will lower rents. This presumption, whether correct or incorrect, together with other restrictions placed on landlords' property rights, e.g., limitations on evicting tenants, and on demolition of buildings or use change, perhaps have persuaded investors to shun properties in rent controlled cities. This chilling effect on the demand for rental income property could explain the relative decline in the value of such property, particularly in periods immediately following the imposition of rent control.

TABLE 1

Cities In Alameda County, 1985

| LAND USE AND HOUSING REGULATIONS/ACTIVITIES | ALAMEDA COUNTY | ALAMEDA (CITY) | ALBANY | BERKELEY | DUBLIN | EMERYVILLE | FREEMONT | HAYWARD | LIVERMORE | NEWARK | OAKLAND | PIEDMONT | PLEASANTON | SAN LEANDRO | UNION CITY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Conditional Zoning | X | | X | | | | X | X | X | | X | X | X | | X |
| 2. Density Bonus provisions | | | | | | | X | X | | | X | | X | | |
| 3. Down zoning | X | X | | | | | | X | | | X | | | | X |
| 4. Formalized, regular coordination with school districts, cities, counties, and special districts | X | X | | | X | X | X | X | X | | | | | | |
| 5. Hazard area zoning | X | | X | | | | | | X | | | | | | X |
| 6. Hillside development regulations | | | X | X | | | X | | X | | X | | | | X |
| 7. Inclusionary zoning | | | | | | | | | | | | | | X | |
| 8. Minimum lot size zoning | X | X | X | X | | | | X | X | X | X | X | X | | X |
| 9. Mixed use zoning | X | X | X | | | | | X | X | | X | | | | |
| 10. Moratorium on building, water-sewer connections, etc. | X | | | | | | | X | | | | | | X | |
| 11. A neighborhood develop program | X | | | | | | | X | | | | | | | |
| 12. Open space zoning | X | X | | | | | X | X | X | X | X | | | | |
| 13. Performance standards | X | X | | | | | X | X | X | | X | | X | | |
| 14. Redevelopment or community development agency | | X | | X | | X | X | X | X | X | | | | X | |
| 15. Specific plan | X | | X | | X | | X | X | X | X | | | | | X |
| 16. Growth cap | | | | | | | | | X | | | | X | | X |
| Total number of Regulations and Activities | 11 | 7 | 6 | 3 | 2 | 2 | 8 | 12 | 10 | 3 | 9 | 2 | 5 | 3 | 8 |
| 17. Rent Control of apartments | | | | X | | | | X | | | X | | | | |
| 18. Rent Control of mobile homes | X | | | X | | | | X | | | X | | | | X |

TABLE 2

Cities In Los Angeles County, 1985

| LAND USE AND HOUSING REGULATIONS/ACTIVITIES | CLARE-MONT | CULVER CITY | GLENDALE | HERMOSA BEACH | MANHATTAN BEACH | POMONA | REDONDO BEACH | SANTA MONICA | WEST COVINA | ALHAMBRA | BELL | BELLFLOWER | BEVERLY HILLS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Conditional Zoning | | X | X | X | | X | | | | | | | |
| 2. Density Bonus provisions | X | X | | | | | | X | X | | | | |
| 3. Down zoning | X | X | X | | | X | | X | | | | | |
| 4. Formalized, regular coordination with school districts, cities, counties, and special districts | X | X | | | | | | X | | | | | |
| 5. Hazard area zoning | X | | | | | | | | | | | | |
| 6. Hillside development regulations | X | X | X | | | X | | | X | | | | |
| 7. Inclusionary zoning | | | | | | | | X | | | | | |
| 8. Minimum lot size zoning | X | X | X | X | X | X | | X | X | | | | |
| 9. Mixed use zoning | X | X | X | X | X | | | X | | | | | |
| 10. Moratorium on building, water-sewer connections, etc. | | X | | X | | | X | | | | | | |
| 11. A neighborhood develop program | | X | X | | | X | X | X | | X | | X | |
| 12. Open space zoning | | | X | X | X | X | | X | X | | | X | |
| 13. Performance standards | | X | | X | X | X | | | X | | | | |
| 14. Redevelopment or community development agency | | X | X | | | X | X | X | X | | | X | |
| 15. Specific plan | X | X | | | X | | | X | X | | | | |
| 16. Growth cap | | | | | | | | | X | | X | | |
| Total number of Regulations and Activities | 8 | 12 | 8 | 6 | 5 | 8 | 3 | 10 | 8 | 1 | 1 | 3 | 0 |
| 17. Rent Control of apartments | | | | | | | | X | | | | | X |
| 18. Rent Control of mobile homes | | | | | | | | | | | | | |

| LAND USE AND HOUSING REGULATIONS/ACTIVITIES | CARSON | DOWNEY | DUARTE | EL MONTE | EL SEGUNDO | GLENDORA | HAWAIIAN GARDENS | HUNTINGTON PARK | INGLEWOOD | LA MIRADA | LANCASTER | LAWNDALE | LOMITA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Conditional Zoning | | X | X | | X | | X | | X | | | | |
| 2. Density Bonus provisions | | X | | | | | | | | | | | |
| 3. Down zoning | | X | | | X | X | X | X | | | | | X |
| 4. Formalized, regular coordination with school districts, cities, counties, and special districts | | | | | | | X | | | | | X | |
| 5. Hazard area zoning | | | | | | | | | | | | | |
| 6. Hillside development regulations | | | X | | | X | | | | | | | |
| 7. Inclusionary zoning | | | | | | | | | | | | | |
| 8. Minimum lot size zoning | | X | | | X | X | X | | | | | | X |
| 9. Mixed use zoning | | | | | | | | | X | | | | |
| 10. Moratorium on building, water-sewer connections, etc. | | | | | | X | | | | | | | |
| 11. A neighborhood develop program | X | X | X | | | | X | X | X | | | X | |
| 12. Open space zoning | | | X | | | X | X | | | | | | X |
| 13. Performance standards | | X | X | | X | X | | | X | X | X | X | |
| 14. Redevelopment or community development agency | X | X | X | | | X | X | X | X | | X | | |
| 15. Specific plan | X | | X | | | | X | X | | X | X | | |
| 16. Growth cap | | | | | | | | | | | | | |
| Total number of Regulations and Activities | 3 | 7 | 7 | 0 | 4 | 7 | 8 | 4 | 5 | 2 | 4 | 2 | 3 |
| 17. Rent Control of apartments | | | | X | | | | | | | | | |
| 18. Rent Control of mobile homes | X | | | | | | | | | | | | |

| LAND USE AND HOUSING REGULATIONS/ACTIVITIES | LONG BEACH | LOS ANGELES | MAYWOOD | MONROVIA | MONTEBELLO | PASADENA | ICO RIVERA | SAN FERNANDO | SAN MARINO | SIGNAL HILLS | SOUTHGATE | TORRANCE | WALNUT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Conditional Zoning | | X | | | | | | | X | | | X | X |
| 2. Density Bonus provisions | X | X | | | | | | | | X | | | |
| 3. Down zoning | X | X | | | X | X | X | | | | | | X |
| 4. Formalized, regular coordination with school districts, cities, counties, and special districts | | | | | | | X | | | | X | X | X |
| 5. Hazard area zoning | | | | | | | | X | | | | | |
| 6. Hillside development regulations | | X | | X | | X | | | | | | X | X |
| 7. Inclusionary zoning | X | X | | | | | | | | | | | |
| 8. Minimum lot size zoning | | | X | | X | | | | X | | | | |
| 9. Mixed use zoning | X | X | X | | | | X | | | | | X | |
| 10. Moratorium on building, water-sewer connections, etc. | | X | | | | | | X | | | | | |
| 11. A neighborhood develop program | X | X | X | | X | X | X | | | | | | |
| 12. Open space zoning | | X | | X | | | | | X | | | X | |
| 13. Performance standards | X | X | | | | | X | | | | | X | X |
| 14. Redevelopment or community development agency | X | X | X | X | X | X | X | X | X | | X | X | X |
| 15. Specific plan | X | X | | X | | | | | X | | X | X | X |
| 16. Growth cap | | | | | X | | | | | | | | |
| Total number of Regulations and Activities | 8 | 12 | 4 | 4 | 5 | 4 | 6 | 3 | 5 | 3 | 3 | 7 | 7 |
| 17. Rent Control of apartments | | X | | | | | | | | | | | |
| 18. Rent Control of mobile homes | | X | | | | | | | | | | | |

TABLE 3

Cities In Santa Clara County, 1985

| LAND USE AND HOUSING REGULATIONS/ACTIVITIES | CAMPBELL | CUPERTINO | GILROY | LOS ALTOS | LOS ALTOS HILLS | LOS GATOS | MILPITAS | MONTE SERENO | MOUNTAIN VIEW | PALO ALTO | SANTA CLARA | SARATOGA | SUNNYVALE | SAN JOSE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Conditional zoning | X | X | | | | X | X | | | | X | X | | |
| 2. Density Bonus provisions | | X | | | | X | X | | X | X | X | | X | X |
| 3. Down zoning | | X | X | X | | X | | | | X | | | | X |
| 4. Formalized, regular coordination with school districts, cities, counties, and special districts | X | X | X | | | X | X | X | X | X | X | X | X | X |
| 5. Hazard area zoning | | | X | | | | X | X | | | | X | | X |
| 6. Hillside development regulations | | X | X | | X | X | X | X | | X | | X | | X |
| 7. Inclusionary zoning ordinance | | X | | | | X | | | | X | | | X | |
| 8. Minimum lot size zoning | X | X | X | X | X | X | X | X | X | X | X | X | | X |
| 9. Mixed use zoning | X | X | X | | | X | | | X | X | | | | |
| 10. Moratorium on building, water-sewer connections, etc. | | | X | | | | | X | | X | | | | |
| 11. A neighborhood development program | | | | | | | | | | | | X | X | X |
| 12. Open space zoning | | X | X | | X | X | | | X | X | | X | X | X |
| 13. Performance standards | X | X | X | | | X | | | | | | | X | X |
| 14. Redevelopment or community development agency | X | | X | | | | X | | X | | X | | X | X |
| 15. Specific plan | | X | X | | | X | | X | X | X | | X | X | |
| 16. Growth Cap | | | | | | | | | | | | | | |
| Total number of Regulations and Activities | 6 | 11 | 11 | 2 | 3 | 11 | 7 | 6 | 7 | 10 | 5 | 8 | 8 | 10 |
| 17. Rent Control of apartments | | | | | | X | | | | | | | | X |
| 18. Rent Control of mobile homes | | | | | | X | | | | | | | | X |

Table 4

Residential Income Property Sale-Resale Data

Seven Cities in L.A. County, 1976-1981

| Number | City | Sales Price ($) | Sales Date | Resale Price ($) | Resale Date | Age* |
|---|---|---|---|---|---|---|
| 1 | Glendale | 68,000 | 9/1976 | 155,000 | 1/1981 | 50.3 |
| 2 | Glendale | 67,000 | 6/1978 | 252,000 | 8/1981 | 25.0 |
| 3 | Glendale | 69,000 | 4/1977 | 128,000 | 1/1981 | 47.9 |
| 4 | Hermosa Beach | 200,002 | 1/1976 | 400,004 | 1/1981 | 3.6 |
| 5 | Hermosa Beach | 164,850 | 8/1977 | 212,000 | 2/1981 | 41.2 |
| 6 | Hermosa Beach | 82,000 | 2/1977 | 168,432 | 6/1981 | 23.8 |
| 7 | Hermosa Beach | 125,000 | 2/1978 | 160,000 | 1/1981 | 16.8 |
| 8 | Hermosa Beach | 178,501 | 6/1978 | 232,755 | 1/1981 | 21.1 |
| 9 | Manhattan Beach | 225,002 | 5/1976 | 550,000 | 2/1981 | 26.0 |
| 10 | Manhattan Beach | 225,000 | 5/1977 | 420,000 | 1/1981 | 6.9 |
| 11 | Manhattan Beach | 295,000 | 9/1978 | 438,000 | 1/1981 | 10.2 |
| 12 | Manhattan Beach | 200,002 | 11/1978 | 335,000 | 1/1981 | 46.5 |
| 13 | Pomona | 48,000 | 11/1976 | 118,333 | 2/1981 | 52.4 |
| 14 | Pomona | 13,800 | 5/1976 | 36,500 | 2/1981 | 66.0 |
| 15 | Pomona | 24,000 | 9/1977 | 33,500 | 1/1981 | 26.2 |
| 16 | Pomona | 30,000 | 6/1977 | 40,000 | 2/1981 | 51.1 |
| 17 | Pomona | 35,000 | 8/1977 | 71,666 | 2/1981 | 52.1 |
| 18 | Pomona | 21,000 | 10/1977 | 40500 | 2/1981 | 30.5 |
| 19 | Pomona | 189,001 | 12/1978 | 608,000 | 1/1981 | 17.5 |
| 20 | Pomona | 72,500 | 8/1978 | 95,000 | 2/1981 | 14.2 |
| 21 | Redondo Beach | 205,000 | 12/1977 | 252,300 | 1/1981 | 14.5 |
| 22 | Redondo Beach | 155,001 | 6.1977 | 191,400 | 1/1981 | 14.1 |
| 23 | Redondo Beach | 82,000 | 1/1977 | 104,001 | 1/1981 | 29.6 |
| 24 | Redondo Beach | 84,000 | 10/1977 | 137,500 | 1/1981 | 30.3 |
| 25 | Redondo Beach | 135,185 | 5/1977 | 206,000 | 1/1981 | 10.0 |
| 26 | Redondo Beach | 68,500 | 6/1977 | 130,001 | 2/1981 | 51.0 |
| 27 | Redondo Beach | 118,000 | 12/1978 | 161,000 | 2/1981 | 31.6 |
| 28 | Redondo Beach | 70,750 | 1/1978 | 120,000 | 4/1981 | 16.7 |
| 29 | Santa Monica | 129,501 | 9/1976 | 270,000 | 1/1981 | 51.2 |
| 30 | Santa Monica | 61,000 | 1/1976 | 185,000 | 2,1981 | 55.7 |
| 31 | Santa Monica | 376,000 | 1/1977 | 770,000 | 1/1981 | 0.6 |
| 32 | Santa Monica | 110,001 | 6/1977 | 205,000 | 1/1981 | 36.0 |
| 33 | Santa Monica | 270,002 | 4/1978 | 350,000 | 1/1981 | 14.8 |
| 34 | Santa Monica | 211,000 | 9/1978 | 136,500 | 5/1981 | 20.3 |
| 35 | West Covina | 170,000 | 7/1978 | 410,000 | 1/1981 | 1.2 |

*Age of property in years at time of sale.

Source: Los Angeles County Assessors rolls.

Table 5

Capitalization Regressions

| | Equation 1 | t-value | Equation 2 | t-value | Equation 3 | t-value |
|---|---|---|---|---|---|---|
| **INTERCEPT** | -112 | -2.58 | -107 | -2.47 | -124 | -2.83 |
| **GAP** | 13.83 | 3.98 | 13.60 | 3.84 | 13.57 | 3.92 |
| **PCASS** | 0.0002 | 1.60 | 0.0002 | 1.36 | 0.0004 | 2.02 |
| **PCTAX** | -0.068 | -0.85 | - | - | -0.15 | -1.49 |
| **ATT** | -1.31 | -1.97 | -1.89 | -2.70 | -0.99 | -1.08 |
| **VAC** | - | - | 0.73 | 0.43 | 2.77 | 1.29 |
| **INF** | 9.58 | 3.66 | 9.56 | 2.62 | 8.78 | 3.37 |
| **LC** | 0.53 | 1.42 | 0.67 | 1.96 | 0.40 | 1.03 |
| **LR** | -7.33 | -1.77 | -8.57 | -1.70 | -11.92 | -2.20 |
| | $R^2$=0.57 | | $R^2$=0.56 | | $R^2$=0.60 | |
| | F =4.47 | | F =4.30 | | F =4.23 | |

For definitions see pp. 12-13.

TABLE 6

Rent, Housing and Community Change Data, 1970 - 1980:

Cities in Alemeda, Los Angeles and Santa Clara Counties

| CITY | RENT8 | RENT7 | RC | LC | LR | LRM | MPR80 | MPR70 | MPRCH | MRR80 | MRR70 | MRRCH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALAMEDA | 257 | 128 | 100.781 | 7 | 0 | 0 | 1.7 | 2.2 | -0.5 | 3.8 | 3.9 | -0.1 |
| ALBANY | 242 | 122 | 98.361 | 6 | 0 | 0 | 4.0 | 2.1 | 1.9 | 3.7 | 3.8 | -0.1 |
| ALHAMBRA | 252 | 109 | 131.193 | 1 | 0 | 0 | 1.8 | 1.8 | 0.0 | 3.7 | 3.7 | 0.0 |
| BELL | 206 | 94 | 119.149 | 1 | 0 | 0 | 2.0 | 2.2 | -0.2 | 3.4 | 3.6 | -0.2 |
| BELLFLOWER | 255 | 120 | 112.500 | 3 | 0 | 0 | 2.4 | 2.2 | 0.2 | 3.7 | 3.8 | -0.1 |
| BERKELEY | 223 | 128 | 74.219 | 3 | 1 | 0 | 1.5 | 1.8 | -0.3 | 3.2 | 3.3 | -0.1 |
| BEVERLY HILLS | 431 | 179 | 140.782 | 0 | 1 | 0 | 1.4 | 1.6 | -0.2 | 3.8 | 3.8 | 0.0 |
| CAMPBELL | 310 | 145 | 113.793 | 6 | 0 | 1 | 4.0 | 2.5 | 1.5 | 3.8 | 4.1 | -0.3 |
| CARSON | 276 | 126 | 119.048 | 3 | 0 | 1 | 3.0 | 3.5 | -0.5 | 4.1 | 4.3 | -0.2 |
| CLAREMONT | 275 | 133 | 106.767 | 9 | 0 | 0 | 1.8 | 1.9 | -0.1 | 4.1 | 4.1 | 0.0 |
| CULVER CITY | 344 | 131 | 162.595 | 13 | 0 | 0 | 1.9 | 2.3 | -0.4 | 3.7 | 4.1 | -0.4 |
| CUPERTINO | 383 | 185 | 107.027 | 11 | 0 | 0 | 2.0 | 2.3 | -0.3 | 4.2 | 4.1 | 0.1 |
| DOWNEY | 263 | 129 | 103.876 | 7 | 0 | 0 | 1.8 | 2.0 | -0.2 | 3.7 | 3.7 | 0.0 |
| DUARTE | 250 | 105 | 138.095 | 7 | 0 | 0 | 2.1 | 2.5 | -0.4 | 3.7 | 4.0 | -0.3 |
| DUBLIN | 366 | 175 | 109.143 | 2 | 0 | 0 | 3.1 | 3.9 | -0.8 | 5.5 | 5.5 | 0.0 |
| EL MONTE | 229 | 102 | 124.510 | 0 | 1 | 0 | 2.9 | 2.5 | 0.4 | 3.7 | 3.8 | -0.1 |
| EL SEGUNDO | 309 | 132 | 134.091 | 4 | 0 | 0 | 1.7 | 2.1 | -0.4 | 3.7 | 3.7 | 0.0 |
| FREMONT | 309 | 155 | 99.355 | 8 | 0 | 0 | 2.1 | 2.5 | -0.4 | 4.1 | 4.2 | -0.1 |
| GILROY | 242 | 93 | 160.215 | 11 | 0 | 0 | 2.6 | 2.9 | -0.3 | 4.0 | 3.9 | 0.1 |
| GLENDALE | 257 | 108 | 137.963 | 9 | 0 | 0 | 1.7 | 1.8 | -0.1 | 3.4 | 3.5 | -0.1 |
| GLENDORA | 279 | 117 | 138.462 | 7 | 0 | 0 | 2.0 | 2.2 | -0.2 | 4.1 | 4.0 | 0.1 |
| HAYWARD | 271 | 141 | 92.199 | 12 | 1 | 1 | 2.0 | 2.5 | -0.5 | 4.0 | 4.0 | 0.0 |
| HUNTINGTON BEACH | 183 | 83 | 120.482 | 4 | 0 | 0 | 2.5 | 1.8 | 0.7 | 2.9 | 3.2 | -0.3 |
| INGLEWOOD | 250 | 123 | 103.252 | 5 | 0 | 0 | 1.5 | 1.9 | -0.4 | 3.3 | 3.6 | -0.3 |
| LA MIRADA | 316 | 144 | 119.444 | 2 | 0 | 0 | 2.6 | 2.8 | -0.2 | 4.5 | 4.4 | 0.1 |
| LANCASTER | 243 | 118 | 105.932 | 4 | 0 | 1 | 2.1 | 2.3 | -0.2 | 4.1 | 4.3 | -0.2 |
| LAWNDALE | 293 | 124 | 136.290 | 2 | 0 | 0 | 2.5 | 2.4 | 0.1 | 3.9 | 3.9 | 0.0 |
| LIVERMORE | 290 | 137 | 111.679 | 10 | 0 | 0 | 2.2 | 2.3 | -0.1 | 4.3 | 3.5 | 0.8 |
| LOMITA | 285 | 125 | 128.000 | 3 | 0 | 0 | 2.0 | 2.1 | -0.1 | 3.8 | 4.3 | -0.5 |
| LONG BEACH | 230 | 101 | 127.723 | 8 | 0 | 0 | 1.5 | 1.7 | -0.2 | 3.4 | 3.4 | 0.0 |
| LOS ALTOS | 428 | 192 | 122.917 | 2 | 0 | 1 | 1.9 | 2.1 | -0.2 | 4.6 | 4.3 | 0.3 |
| LOS ANGELES | 229 | 107 | 114.019 | 12 | 1 | 1 | 1.8 | 1.9 | -0.1 | 3.2 | 3.4 | -0.2 |
| LOS GATOS | 353 | 154 | 129.221 | 11 | 0 | 0 | 1.7 | 1.9 | -0.2 | 4.0 | 3.9 | 0.1 |
| MANHATTAN BEACH | 438 | 173 | 153.179 | 5 | 0 | 0 | 1.8 | 2.0 | -0.2 | 4.0 | 3.9 | 0.1 |
| MAYWOOD | 185 | 84 | 120.238 | 4 | 0 | 0 | 2.9 | 2.1 | 0.8 | 3.1 | 3.4 | -0.3 |
| MILPITAS | 345 | 152 | 126.974 | 7 | 0 | 0 | 2.9 | 3.5 | -0.6 | 4.5 | 4.4 | 0.1 |
| MONROVIA | 243 | 100 | 143.000 | 5 | 0 | 0 | 2.0 | 2.2 | -0.2 | 3.9 | 3.9 | 0.0 |
| MONTE BELLO | 254 | 108 | 135.185 | 6 | 0 | 0 | 2.2 | 2.2 | 0.0 | 3.6 | 3.8 | -0.2 |
| MOUNTAIN VIEW | 310 | 158 | 96.203 | 7 | 0 | 0 | 1.6 | 1.9 | -0.3 | 3.6 | 3.5 | 0.1 |
| NEWARK | 315 | 140 | 125.000 | 7 | 0 | 0 | 3.2 | 3.5 | -0.3 | 4.5 | 4.4 | 0.1 |
| OAKLAND | 202 | 104 | 94.231 | 8 | 1 | 1 | 1.4 | 1.8 | -0.4 | 3.3 | 3.5 | -0.2 |
| PALO ALTO | 344 | 162 | 112.346 | 10 | 0 | 0 | 1.6 | 1.8 | -0.2 | 3.7 | 3.6 | 0.1 |
| PASADENA | 237 | 103 | 130.097 | 5 | 0 | 0 | 1.5 | 1.7 | -0.2 | 3.4 | 3.6 | -0.2 |
| PICO RIVIERA | 248 | 114 | 117.544 | 6 | 0 | 0 | 2.4 | 2.5 | -0.1 | 3.5 | 3.9 | -0.4 |
| PIEDMONT | 427 | 190 | 124.737 | 2 | 0 | 0 | 2.3 | 2.6 | -0.3 | 5.6 | 5.8 | -0.2 |
| PLEASANTON | 313 | 127 | 146.457 | 5 | 0 | 0 | 2.0 | 2.5 | -0.5 | 4.3 | 4.0 | 0.3 |
| REDONDO BEACH | 374 | 142 | 163.380 | 3 | 0 | 0 | 1.9 | 2.3 | -0.4 | 3.9 | 4.0 | -0.1 |
| SANFERNA | 224 | 91 | 146.154 | 3 | 0 | 0 | 2.8 | 2.3 | 0.5 | 3.3 | 3.5 | -0.2 |
| SAN JOSE | 295 | 135 | 118.519 | 11 | 1 | 1 | 2.2 | 2.2 | 0.0 | 3.9 | 3.9 | 0.0 |
| SAN LEANDRO | 255 | 134 | 90.299 | 3 | 0 | 0 | 1.6 | 2.1 | -0.5 | 3.8 | 3.9 | -0.1 |
| SAN MARINO | 500 | 162 | 208.642 | 5 | 0 | 0 | 3.1 | 2.3 | 0.8 | 6.3 | 4.6 | 1.7 |
| SANTA CLARA | 317 | 144 | 120.139 | 4 | 0 | 0 | 1.8 | 2.2 | -0.4 | 3.8 | 3.9 | -0.1 |
| SANTA MONICA | 296 | 132 | 124.242 | 10 | 1 | 0 | 1.5 | 1.7 | -0.2 | 3.3 | 3.3 | 0.0 |
| SARATOGA | 377 | 162 | 132.716 | 10 | 0 | 0 | 1.8 | 2.3 | -0.5 | 4.6 | 4.6 | 0.0 |
| SOUTH GATE | 200 | 93 | 115.054 | 3 | 0 | 0 | 3.4 | 2.0 | 1.4 | 3.3 | 3.5 | -0.2 |
| SUNNYVALE | 315 | 151 | 108.609 | 8 | 0 | 0 | 1.8 | 2.3 | -0.5 | 3.7 | 3.9 | -0.2 |
| TORRANCE | 328 | 116 | 182.759 | 9 | 0 | 0 | 1.8 | 2.0 | -0.2 | 3.7 | 3.7 | 0.0 |
| UNION CITY | 313 | 115 | 172.174 | 8 | 0 | 1 | 2.8 | 3.6 | -0.8 | 4.3 | 4.2 | 0.1 |
| WEST COVINA | 328 | 142 | 130.986 | 8 | 0 | 1 | 2.2 | 2.3 | -0.1 | 4.1 | 4.1 | 0.0 |

| CITY | PROU8 | PROU7 | PROUC | VAC80 | VAC70 | VACCH | POP80 | POP70 | POPCH | PCI80 | PCI70 | PCICH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALAMEDA | 58.8641 | 61.7309 | -2.867 | 3.5 | 4.7 | -1.2 | 63852 | 70968 | -10.027 | 9288 | 3830 | 142.507 |
| ALBANY | 50.9117 | 47.3784 | 3.533 | 2.1 | 2.2 | -0.1 | 15130 | 14674 | 3.108 | 8809 | 3962 | 122.337 |
| ALHAMBRA | 56.4440 | 53.4164 | 3.028 | 4.5 | 3.9 | 0.6 | 64615 | 62125 | 4.008 | 7772 | 4141 | 87.684 |
| BELL | 36.3403 | 66.3542 | -30.014 | 3.2 | 5.0 | -1.8 | 25450 | 21836 | 16.551 | 5302 | 3349 | 58.316 |
| BELLFLOWER | 58.0133 | 54.3745 | 3.639 | 3.2 | 3.7 | -0.5 | 53441 | 51454 | 3.862 | 7694 | 3558 | 116.245 |
| BERKELEY | 62.2338 | 65.1232 | -2.889 | 2.4 | 3.5 | -1.1 | 103328 | 116716 | -11.471 | 8461 | 3949 | 114.257 |
| BEVERLY HILLS | 57.8434 | 60.7267 | -2.883 | 3.6 | 2.9 | 0.7 | 32367 | 33416 | -3.139 | 24387 | 11324 | 115.357 |
| CAMPBELL | 57.5909 | 37.1299 | 20.461 | 2.2 | 3.1 | -0.9 | 27067 | 24770 | 9.273 | 9421 | 3466 | 171.812 |
| CARSON | 20.8280 | 25.0070 | -4.179 | 3.6 | 3.9 | -0.3 | 81221 | 71150 | 14.155 | 7177 | 3006 | 138.756 |
| CLAREMONT | 29.8407 | 37.0075 | -7.167 | 2.9 | 3.3 | -0.4 | 30950 | 23464 | 31.904 | 9963 | 4358 | 128.614 |
| CULVER CITY | 44.3180 | 51.3235 | -7.005 | 3.6 | 8.0 | -4.4 | 38139 | 31035 | 22.890 | 10595 | 4532 | 133.782 |
| CUPERTINO | 37.7076 | 33.6672 | 4.040 | 2.5 | 16.3 | -13.8 | 34015 | 18216 | 86.731 | 11479 | 4362 | 163.159 |
| DOWNEY | 46.6648 | 42.3810 | 4.284 | 3.2 | 5.0 | -1.8 | 82602 | 88445 | -6.606 | 9339 | 4397 | 112.395 |
| DUARTE | 29.2683 | 29.9861 | -0.718 | 3.4 | 10.7 | -7.3 | 16766 | 14981 | 11.915 | 6998 | 2897 | 141.560 |
| DUBLIN | 24.0516 | 19.0250 | 5.027 | 1.8 | 11.8 | -10.0 | 13496 | 13641 | -1.063 | 8033 | 3244 | 147.626 |
| EL MONTE | 58.6016 | 58.0551 | 0.546 | 3.8 | 3.9 | -0.1 | 79494 | 69837 | 13.828 | 5002 | 2862 | 74.773 |
| EL SEGUNDO | 59.4486 | 56.4485 | 3.000 | 3.7 | 4.3 | -0.6 | 13752 | 15620 | -11.959 | 11122 | 4430 | 151.061 |
| FREMONT | 34.0669 | 24.9812 | 9.086 | 3.5 | 4.8 | -1.3 | 131945 | 100869 | 30.808 | 9087 | 3434 | 164.619 |
| GILROY | 42.2284 | 41.2655 | 0.963 | 5.1 | 2.3 | 2.8 | 21641 | 12665 | 70.872 | 6942 | 2894 | 139.876 |
| GLENDALE | 57.3367 | 58.6495 | -1.313 | 3.1 | 3.9 | -0.8 | '139060 | 132752 | 4.752 | 9514 | 4572 | 108.093 |
| GLENDORA | 25.1747 | 24.4350 | 0.740 | 3.6 | 3.9 | -0.3 | 38654 | 31349 | 23.302 | 8788 | 3672 | 139.325 |
| HAYWARD | 45.2775 | 43.7126 | 1.565 | 3.6 | 3.0 | 0.6 | 94167 | 93058 | 1.192 | 8070 | 3887 | 107.615 |
| HUNTINGTON BEACH | 74.2857 | 73.9615 | 0.324 | 4.3 | 5.1 | -0.8 | 46223 | 33744 | 36.981 | 4498 | 3464 | 29.850 |
| INGLEWOOD | 65.9918 | 63.9890 | 2.003 | 3.4 | 4.8 | -1.4 | 94245 | 89485 | 5.319 | 6962 | 4187 | 66.277 |
| LA MIRADA | 15.9311 | 13.1389 | 2.792 | 3.1 | 3.4 | -0.3 | 40986 | 30808 | 33.037 | 8199 | 3651 | 124.569 |
| LANCASTER | 30.3720 | 35.1349 | -4.763 | 5.0 | 3.4 | 1.6 | 48027 | 30948 | 55.186 | 8097 | 3588 | 125.669 |
| LAWNDALE | 65.1217 | 63.5558 | 1.566 | 5.2 | 3.3 | 1.9 | 23460 | 24825 | -5.498 | 6795 | 3007 | 125.973 |
| LIVERMORE | 28.8047 | 25.0115 | 3.793 | 3.6 | 4.9 | -1.3 | 48349 | 37703 | 28.236 | 8839 | 3592 | 146.075 |
| LOMITA | 55.4507 | 55.7398 | -0.289 | 3.7 | 4.7 | -1.0 | 18807 | 19784 | -4.938 | 8691 | 3581 | 142.698 |
| LONG BEACH | 57.1139 | 56.2401 | 0.874 | 4.9 | 6.0 | -1.1 | 361334 | 358633 | 0.753 | 8343 | 3983 | 109.465 |
| LOS ALTOS | 13.6683 | 15.8848 | -2.217 | 4.5 | 1.9 | 2.6 | 25769 | 24956 | 3.258 | 14432 | 5887 | 145.150 |
| LOS ANGELES | 59.7108 | 59.1384 | 0.572 | 3.9 | 5.6 | -1.7 | 2966850 | 2816061 | 5.355 | 8408 | 3977 | 111.416 |
| LOS GATOS | 36.9390 | 39.0965 | -2.158 | 3.1 | 6.6 | -3.5 | 26906 | 23735 | 13.360 | 12771 | 4555 | 180.373 |
| MANHATTAN BEACH | 36.4025 | 41.0447 | -4.642 | 5.4 | 3.1 | 2.3 | 31542 | 35352 | -10.777 | 13697 | 5147 | 166.116 |
| MAYWOOD | 67.6529 | 70.8257 | -3.173 | 3.6 | 4.9 | -1.3 | 21810 | 16996 | 28.324 | 4457 | 3021 | 47.534 |
| MILPITAS | 28.0963 | 21.1329 | 6.963 | 3.3 | 3.3 | 0.0 | 37820 | 27149 | 39.305 | 7905 | 2938 | 169.061 |
| MONROVIA | 51.4877 | 51.0420 | 0.446 | 4.3 | 4.9 | -0.6 | 30531 | 30015 | 1.719 | 7525 | 3433 | 119.196 |
| MONTE BELLO | 49.4219 | 45.7548 | 3.667 | 3.8 | 3.6 | 0.2 | 52929 | 42807 | 23.646 | 7153 | 3775 | 89.483 |
| MOUNTAIN VIEW | 65.5859 | 66.5073 | -0.921 | 2.8 | 6.1 | -3.3 | 58655 | 51092 | 14.803 | 10754 | 4068 | 164.356 |
| NEWARK | 22.6888 | 24.2898 | -1.601 | 3.3 | 3.9 | -0.6 | 32126 | 27153 | 18.315 | 7806 | 3007 | 159.594 |
| OAKLAND | 57.0759 | 57.6240 | -0.548 | 5.3 | 8.7 | -3.4 | 339337 | 361561 | -6.147 | 7701 | 3651 | 110.929 |
| PALO ALTO | 44.7376 | 45.7997 | -1.062 | 2.2 | 5.9 | -3.7 | 55225 | 55966 | -1.324 | 12799 | 4620 | 177.035 |
| PASADENA | 54.3225 | 56.3680 | -2.045 | 3.1 | 5.7 | -2.6 | 118550 | 113327 | 4.609 | 9189 | 2839 | 223.670 |
| PICO RIVIERA | 28.8006 | 23.9242 | 4.876 | 5.6 | 4.7 | 0.9 | 53459 | 54170 | -1.313 | 5878 | 3012 | 95.153 |
| | | | | | | | 10498 | 10917 | -3.838 | 17259 | 8663 | 99.227 |
| PIEDMONT | 9.5137 | 9.7355 | -0.222 | 1.9 | 3.1 | -1.2 | 35160 | 18328 | 91.838 | 9619 | 3845 | 150.169 |
| PLEASANTON | 23.3719 | 19.3645 | 4.007 | 3.5 | 10.0 | -6.5 | 57102 | 56075 | 1.831 | 10569 | 3660 | 188.770 |
| REDONDO | 65.8212 | 55.4361 | 10.385 | 3.7 | 5.3 | -1.6 | | | | | | |
| SAN FERNANDO | 44.4773 | 48.0472 | -3.570 | 2.2 | 2.6 | -0.4 | 17731 | 16571 | 7.000 | 9265 | 3012 | 207.603 |
| SAN JOSE | 37.9030 | 36.5011 | 1.402 | 3.7 | 6.5 | -2.8 | 629442 | 445779 | 41.200 | 8379 | 3406 | 146.007 |
| SAN LEANDRO | 37.2595 | 33.9454 | 3.314 | 3.6 | 2.7 | 0.9 | 63952 | 68698 | -6.908 | 9453 | 4118 | 129.553 |
| SAN MARINO | 5.3291 | 7.9190 | -2.590 | 3.3 | 4.0 | -0.7 | 13307 | 14177 | -6.137 | 21487 | 9988 | 115.128 |
| SANTA CLARA | 52.5869 | 44.3311 | 8.256 | 2.6 | 8.9 | -6.3 | 87746 | 87717 | 0.033 | 9356 | 3572 | 161.926 |
| SANTA MONICA | 77.8694 | 77.5326 | 0.337 | 2.3 | 4.0 | -1.7 | 88314 | 88289 | 0.028 | 11126 | 4655 | 139.012 |
| SARATOGA | 10.3281 | 9.4640 | 0.864 | 3.1 | 3.5 | -0.4 | 29261 | 27110 | 7.934 | 15059 | 5535 | 172.069 |
| SOUTH GATE | 49.0583 | 51.3755 | -2.317 | 2.8 | 5.0 | -2.2 | 66784 | 56909 | 17.352 | 5734 | 3642 | 57.441 |
| SUNNY VALE | 49.0334 | 41.6333 | 7.400 | 2.8 | 6.9 | -4.1 | 106618 | 95408 | 11.750 | 10359 | 4066 | 154.771 |
| TORRANCE | 44.2686 | 42.0187 | 2.250 | 3.8 | 5.6 | -1.8 | 129881 | 134584 | -3.494 | 10285 | 3393 | 203.124 |
| UNION CITY | 29.7191 | 26.1514 | 3.568 | 4.3 | 3.0 | 1.3 | 39406 | 14724 | 167.631 | 7565 | 2956 | 155.920 |
| WEST COVINA | 29.2357 | 20.9110 | 8.325 | 6.0 | 5.7 | 0.3 | 8291 | 68034 | -87.813 | 8856 | 3768 | 135.032 |

| CITY | AVPR8 | AVPR7 | AVPRC | PLP80 | PLP70 | RULPC | P30Y8 | P30Y7 | RU30C | MILE |
|---|---|---|---|---|---|---|---|---|---|---|
| ALAMEDA | 0.444444 | 0.511111 | -0.06667 | 2.09495 | 1.56989 | 0.5251 | 42.3410 | 39.0073 | 3.334 | 0.4 |
| ALBANY | 0.444444 | 0.468085 | -0.02364 | 1.06017 | 0.43684 | 0.6233 | 43.6963 | 34.0007 | 9.696 | 1.0 |
| ALHAMBRA | 0.545455 | 0.466667 | 0.07879 | 1.67872 | 1.47508 | 0.2036 | 34.8915 | 29.4346 | 5.457 | 2.2 |
| BELL | 0.648649 | 0.564103 | 0.08455 | 2.04427 | 1.67452 | 0.3698 | 30.3412 | 20.8268 | 9.514 | 14.4 |
| BELLFLOWER | 0.523810 | 0.571429 | -0.04762 | 1.64287 | 1.51277 | 0.1301 | 18.3986 | 11.4047 | 6.994 | 9.2 |
| BERKELEY | 0.439024 | 0.487805 | -0.04878 | 2.53765 | 4.05624 | -1.5186 | 58.6428 | 48.7118 | 9.931 | 2.4 |
| BEVERLY HILLS | 0.387755 | 0.408163 | -0.02041 | 0.88382 | 1.55213 | -0.6683 | 53.7737 | 38.3534 | 15.420 | 7.4 |
| CAMPBELL | 0.454545 | 0.615385 | -0.16084 | 1.83500 | 0.85312 | 0.9819 | 7.2803 | 8.0861 | -0.806 | 11.4 |
| CARSON | 0.634615 | 0.730769 | -0.09615 | 1.13948 | 0.60241 | 0.5371 | 20.1308 | 7.2959 | 12.835 | 5.5 |
| CLAREMONT | 0.409836 | 0.500000 | -0.09016 | 0.87781 | 1.74726 | -0.8694 | 26.8258 | 20.0731 | 6.753 | 34.9 |
| CULVER CITY | 0.477273 | 0.533333 | -0.05606 | 1.92880 | 1.66084 | 0.2680 | 31.2154 | 13.6888 | 17.527 | 5.8 |
| CUPERTINO | 0.421053 | 0.586207 | -0.16515 | 0.75561 | 1.20137 | -0.4458 | 2.6339 | 4.4622 | -1.828 | 7.6 |
| DOWNEY | 0.468085 | 0.531915 | -0.06383 | 1.44319 | 0.45135 | 0.9918 | 12.9887 | 5.7757 | 7.213 | 13.4 |
| DUARTE | 0.520833 | 0.659574 | -0.13874 | 1.67910 | 1.86047 | -0.1814 | 14.8632 | 22.2481 | -7.385 | 31.0 |
| DUBLIN | 0.539683 | 0.655738 | -0.11606 | 0.52576 | 0.46875 | 0.0570 | 11.4616 | 0.7813 | 10.680 | 10.6 |
| EL MONTE | 0.707317 | 0.619048 | 0.08827 | 2.73228 | 1.29087 | 1.4414 | 25.6354 | 14.8566 | 10.779 | 24.8 |
| EL SEGUNDO | 0.465116 | 0.558140 | -0.09302 | 1.74255 | 2.64453 | -0.9020 | 25.8853 | 15.2829 | 10.602 | 1.4 |
| FREMONT | 0.482143 | 0.660714 | -0.17857 | 1.37041 | 0.60096 | 0.7694 | 5.7810 | 9.8257 | -4.045 | 2.0 |
| GILROY | 0.568627 | 0.632653 | -0.06403 | 2.94321 | . | . | 20.4294 | 35.0000 | -14.571 | 14.5 |
| GLENDALE | 0.465116 | 0.488372 | -0.02326 | 2.11328 | 1.45286 | 0.6604 | 39.7966 | 2.2482 | 37.548 | 18.0 |
| GLENDORA | 0.473684 | 0.581818 | -0.10813 | 1.17175 | 1.34048 | -0.1687 | 18.3780 | 14.2091 | 4.169 | 32.6 |
| HAYWARD | 0.469388 | 0.612245 | -0.14286 | 1.38517 | 1.05066 | 0.3345 | 14.6687 | 9.9528 | 4.716 | 4.4 |
| HUNTINGTON BEACH | 0.787879 | 0.542857 | 0.24502 | 4.58132 | 2.96706 | 1.6143 | 46.5214 | 40.0236 | 6.498 | 13.4 |
| INGLEWOOD | 0.525000 | 0.512195 | 0.01280 | 2.11941 | 1.58040 | 0.5390 | 25.7010 | 13.8530 | 11.848 | 5.4 |
| LA MIRADA | 0.534483 | 0.666667 | -0.13218 | 1.24740 | 0.09823 | 1.1492 | 3.5863 | 1.3752 | 2.211 | 12.6 |
| LANCASTER | 0.461538 | 0.566038 | -0.10450 | 0.77976 | . | . | 13.7124 | 7.9460 | 5.766 | 50.7 |
| LAWNDALE | 0.609756 | 0.690476 | -0.08072 | 1.37814 | 1.16899 | 0.2091 | 24.0325 | 8.5111 | 15.521 | 4.0 |
| LIVERMORE | 0.491228 | 0.618182 | -0.12695 | 0.85561 | 1.61884 | -0.7632 | 12.8556 | 15.4157 | -2.560 | 24.3 |
| LOMITA | 0.488372 | 0.571429 | -0.08306 | 1.18937 | 1.64959 | -0.4602 | 28.7313 | 17.1707 | 11.561 | 4.4 |
| LONG BEACH | 0.487805 | 0.487805 | 0.00000 | 1.83160 | 2.01158 | -0.1800 | 43.7517 | 35.3574 | 8.394 | 1.3 |
| LOS ALTOS | 0.390625 | 0.491803 | -0.10118 | 0.64205 | 0.41017 | 0.2319 | 29.6950 | 17.2272 | 12.468 | 5.0 |
| LOS ANGELES | 0.512195 | 0.523810 | -0.01161 | 3.06629 | 2.50011 | 0.5662 | 39.4145 | 3.3826 | 36.032 | 12.6 |
| LOS GATOS | 0.400000 | 0.480769 | -0.08077 | 1.05317 | 1.08020 | -0.0270 | 26.3036 | 25.2046 | 1.099 | 20.4 |
| MANHATTAN BEACH | 0.440000 | 0.500000 | -0.06000 | 0.73345 | 0.28620 | 0.4472 | 38.8307 | 16.8861 | 21.945 | 0.6 |
| MAYWOOD | 0.857143 | 0.594595 | 0.26255 | 2.53796 | 3.13040 | -0.5924 | 44.0517 | 33.0959 | 10.956 | 15.6 |
| MILPITAS | 0.563636 | 0.709091 | -0.14545 | 1.16170 | 0.21444 | 0.9473 | 2.1036 | 4.2888 | -2.185 | 6.4 |
| MONROVIA | 0.478261 | 0.511111 | -0.03285 | 1.59531 | 0.69531 | 0.9000 | 36.3829 | 24.5498 | 11.833 | 30.2 |
| MONTE BELLO | 0.555556 | | | 1.63860 | 1.96716 | -0.3286 | 20.7255 | 13.0886 | 7.637 | 19.0 |
| MOUNTAIN VIEW | 0.512195 | 0.925000 | -0.41280 | 1.74777 | 0.59898 | 1.1488 | 9.8152 | 5.9898 | 3.825 | 3.8 |
| NEWARK | 0.586207 | 0.740741 | -0.15453 | 1.38690 | 0.80446 | 0.5824 | 6.1693 | 8.8490 | -2.680 | 2.4 |
| OAKLAND | 0.465116 | 0.488372 | -0.02326 | 3.20957 | 5.49375 | -2.2842 | 50.5689 | 48.1600 | 2.409 | 1.2 |
| PALO ALTO | 0.420000 | 0.469388 | -0.04939 | 1.90144 | 2.97556 | -1.0741 | 32.2177 | 25.3241 | 6.894 | 3.6 |
| PASADENA | 0.444444 | 0.444444 | 0.00000 | 2.07730 | 3.05522 | -0.9779 | 43.5921 | 38.5697 | 5.022 | 23.0 |
| PICO | 0.666667 | 0.729167 | -0.06250 | 1.93912 | 1.19325 | 0.7459 | 19.3010 | 11.9907 | 7.310 | 17.1 |
| PIEDMONT | 0.342466 | 0.375000 | -0.03253 | 1.11732 | 0.57803 | 0.5393 | 86.5922 | 78.6127 | 7.979 | 11.8 |
| PLEASANTON | 0.378788 | 0.560606 | -0.18182 | 1.05860 | 2.78638 | -1.7278 | 11.1909 | 23.4262 | -12.235 | 14.2 |
| REDONDO BEACH | 0.465116 | 0.590909 | -0.12579 | 0.76961 | 1.0[illegible]489 | -0.3253 | 14.6116 | 17.4126 | -2.801 | 0.6 |
| SAN FERNANDO | 0.651163 | 0.568182 | 0.08298 | 2.95341 | 7.[illegible]687 | -4.0635 | 40.0166 | 41.6411 | -1.624 | 19.2 |
| SAN JOSE | 0.509434 | 0.596154 | -0.08672 | 2.14748 | [illegible].69335 | -0.5459 | 14.8687 | 19.4806 | -4.612 | 10.8 |
| SAN LEANDRO | 0.420000 | 0.480000 | -0.06000 | 0.92363 | 0.[illegible]1991 | 0.0037 | 27.1030 | 17.8585 | 9.245 | 2.6 |
| SAN MARINO | 0.378378 | 0.388889 | -0.01051 | 0.00000 | 1.11111 | -1.1111 | 73.5043 | 40.0000 | 33.504 | 24.3 |
| SANTA CLARA | 0.468085 | 0.591837 | -0.12375 | 1.37438 | [illegible].55192 | 0.8225 | 8.2295 | 6.9033 | 1.326 | 8.0 |
| SANTA | 0.648649 | 0.500000 | 0.14865 | 1.69328 | 1.36089 | 0.3324 | 30.7335 | 21.5411 | 9.192 | 1.2 |
| SARATOGA | 0.402778 | 0.544118 | -0.14134 | 0.83333 | 0.44709 | 0.3862 | 29.6875 | 26.9747 | 2.713 | 12.2 |
| SOUTH GATE | 0.571429 | 0.511628 | 0.05980 | 3.01978 | 0.80535 | 2.2144 | 46.1696 | 23.7663 | 22.403 | 13.2 |
| SUNNYVALE | 0.468085 | 0.580000 | -0.11191 | 1.82414 | 0.[illegible]5683 | 1.1573 | 6.1232 | 4.8583 | 1.265 | 4.0 |
| TORRANCE | 0.469388 | 0.551020 | -0.08163 | 1.85767 | [illegible]1957 | 0.8958 | 11.3509 | 5.9565 | 5.394 | 4.2 |
| UNION CITY | 0.563636 | 0.679245 | -0.11561 | 1.04402 | [illegible].95025 | 0.0490 | 9.9041 | 28.6567 | -18.753 | 1.0 |
| WEST COVINA | 0.509091 | 0.625000 | -0.11591 | 1.24433 | 0.[illegible]38186 | 0.7061 | 3.0719 | 1.9733 | 1.099 | 26.8 |

| CITY | UE80 | UE70 | UECH | PMOV8 | PMOV7 | MOVCH |
|---|---|---|---|---|---|---|
| ALAMEDA | 4.8 | 4.9 | -0.1 | 41.2582 | 53.8767 | -12.618 |
| ALBANY | 4.3 | 4.7 | -0.4 | 46.3037 | 40.9902 | 5.314 |
| ALHAMBRA | 4.0 | 3.9 | 0.1 | 41.2925 | 37.1750 | 4.117 |
| BELL | 7.2 | 6.8 | 0.4 | 35.2136 | 46.8341 | -11.620 |
| BELLFLOWER | 5.8 | 5.5 | 0.3 | 44.0466 | 52.7014 | -8.655 |
| BERKELEY | 6.8 | 8.3 | -1.5 | 44.0710 | 52.0954 | -8.024 |
| BEVERLY HILLS | 4.0 | 4.5 | -0.5 | 27.8870 | 28.6245 | -0.737 |
| CAMPBELL | 3.7 | 5.1 | -1.4 | 51.5441 | 56.9362 | -5.392 |
| CARSON | 5.8 | 6.9 | -1.1 | 39.5231 | 55.4663 | -15.943 |
| CLAREMONT | 3.8 | 3.9 | -0.1 | 38.6587 | 43.8033 | -5.145 |
| CULVER CITY | 3.6 | 6.1 | -2.5 | 39.3561 | 45.4196 | -6.063 |
| CUPERTINO | 2.4 | 4.6 | -2.2 | 49.6114 | 68.6499 | -19.038 |
| DOWNEY | 4.9 | 4.4 | 0.5 | 42.9021 | 54.7812 | -11.879 |
| DUARTE | 6.0 | 5.7 | 0.3 | 43.5945 | 47.7519 | -4.157 |
| DUBLIN | 5.7 | 5.2 | 0.5 | 44.0589 | 80.9375 | -36.879 |
| EL MONTE | 8.5 | 5.8 | 2.7 | 42.1774 | 51.6426 | -9.465 |
| EL SEGUNDO | 2.2 | 5.5 | -3.3 | 41.3435 | 48.0627 | -6.719 |
| FREMONT | 5.9 | 4.9 | 1.0 | 55.2022 | 57.9327 | -2.730 |
| GILROY | 12.2 | 10.2 | 2.0 | 51.2119 | 47.8667 | 3.345 |
| GLENDALE | 4.1 | 4.5 | -0.4 | 37.4658 | 41.5506 | -4.085 |
| GLENDORA | 3.9 | 4.6 | -0.7 | 50.7555 | 44.7274 | 6.028 |
| HAYWARD | 7.2 | 6.5 | 0.7 | 44.3636 | 52.1176 | -7.754 |
| HUNTINGTON BEACH | 9.1 | 7.0 | 2.1 | 34.2568 | 41.3030 | -7.046 |
| INGLEWOOD | 6.7 | 5.7 | 1.0 | 36.7681 | 43.4249 | -6.657 |
| LA MIRADA | 5.2 | 4.8 | 0.4 | 45.0104 | 62.2790 | -17.269 |
| LANCASTER | 6.7 | 6.4 | 0.3 | 59.0719 | 55.2024 | 3.869 |
| LAWNDALE | 6.0 | 7.2 | -1.2 | 42.6845 | 51.3536 | -8.669 |
| LIVERMORE | 4.6 | 4.7 | -0.1 | 50.5027 | 54.9301 | -4.427 |
| LOMITA | 3.9 | 6.7 | -2.8 | 40.6483 | 52.3869 | -11.739 |
| LONG BEACH | 5.8 | 6.3 | -0.5 | 44.9723 | 47.4431 | -2.471 |
| LOS ALTOS | 2.7 | 3.7 | -1.0 | 42.8571 | 44.7088 | -1.852 |
| LOS ANGELES | 6.8 | 7.0 | -0.2 | 35.8661 | 42.0373 | -6.171 |
| LOS GATOS | 3.4 | 4.8 | -1.4 | 48.3175 | 45.1391 | 3.178 |
| MANHATTAN BEACH | 3.0 | 4.8 | -1.8 | 53.8558 | 57.0883 | -3.233 |
| MAYWOOD | 8.4 | 5.7 | 2.7 | 39.3157 | 47.7116 | -8.396 |
| MILPITAS | 3.7 | 6.3 | -2.6 | 58.7127 | 60.9006 | -2.188 |
| MONROVIA | 5.9 | 6.7 | -0.8 | 41.8362 | 45.0169 | -3.181 |
| MONTE BELLO | 5.3 | 4.7 | 0.6 | 39.0553 | 1.1307 | 37.925 |
| MOUNTAIN VIEW | 3.1 | 4.4 | -1.3 | 46.1188 | 61.4930 | -15.374 |
| NEWARK | 6.3 | 4.9 | 1.4 | 49.9761 | 55.4455 | -5.469 |
| OAKLAND | 9.4 | 7.9 | 1.5 | 36.7066 | 41.0375 | -4.331 |
| PALO ALTO | 2.7 | 4.1 | -1.4 | 2.3186 | 52.2529 | -49.934 |
| PASADENA | 4.9 | 4.9 | 0.0 | 40.6580 | 39.4478 | 1.210 |
| PICO RIVIERA | 7.0 | 5.7 | 1.3 | 38.1962 | 44.1211 | -5.925 |
| PIEDMONT | 3.4 | 4.2 | -0.8 | 41.3408 | 54.0462 | -12.705 |

| | | | | | | |
|---|---|---|---|---|---|---|
| PLEASANTON | 3.7 | 3.7 | 0.0 | 52.3251 | 59.4427 | -7.118 |
| REDONDO BEACH | 4.0 | 6.5 | -2.5 | 37.8044 | 50.6339 | -12.829 |
| SAN FERNANDO | 6.1 | 6.0 | 0.1 | 30.2413 | 40.4141 | -10.173 |
| SAN JOSE | 5.3 | 6.5 | -1.2 | 52.1110 | 56.4974 | -4.386 |
| SAN LEANDRO | 5.5 | 4.9 | 0.6 | 37.2430 | 42.8186 | -5.576 |
| SAN MARINO | 1.8 | 2.6 | -0.8 | 38.4615 | 30.8333 | 7.628 |
| SANTA CLARA | 3.9 | 6.3 | -2.4 | 47.0529 | 58.1303 | -11.077 |
| SANTA MONICA | 4.3 | 6.1 | -1.8 | 30.0988 | 39.8876 | -9.789 |
| SARATOGA | 2.8 | 3.6 | -0.8 | 54.8958 | 50.8197 | 4.076 |
| SOUTH GATE | 6.8 | 5.4 | 1.4 | 39.1858 | 45.4849 | -6.299 |
| SUNNYVALE | 3.5 | 5.4 | -1.9 | 4.3513 | 61.7052 | -57.354 |
| TORRANCE | 3.5 | 4.7 | -1.2 | 40.2632 | 55.8641 | -15.601 |
| UNION CITY | 6.2 | 5.8 | 0.4 | 56.6309 | 40.9950 | 15.636 |
| WEST COVINA | 4.7 | 4.4 | 0.3 | 50.2916 | 60.1999 | -9.908 |

## DEFINITION OF VARIABLES FOR RENT CHANGE STUDY:

RENT8: MEDIAN MONTHLY CONTRACT RENT, 1980

RENT7: MEDIAN MONTHLY CONTRACT RENT, 1970

RC : PERCENTAGE CHANGE IN RENT BETWEEN 1970 AND 1980

LC : LEGAL CLIMATE

LR : PRESENCE OF RENT CONTROL

LRM : RENT CONTROL ON MOBILE HOMES

DU : DUMMY VARIABLE FOR CITIES LOCATED OUTSIDE OF LOS ANGELES COUNTY

MPR80: MEDIAN NUMBER OF PERSONS PER RENTER OCCUPIED UNIT, 1980

MPR70: MEDIAN NUMBER OF PERSONS PER RENTER OCCUPIED UNIT, 1970

MPRCH: CHANGE IN MEDIAN NUMBER OF PERSONS PER RENTER OCCUPIED UNIT

MRR80: MEDIAN NUMBER OF ROOMS PER RENTER OCCUPIED UNIT, 1980

MRR70: MEDIAN NUMBER OF ROOMS PER RENTER OCCUPIED UNIT, 1970

MRRCH: CHANGE IN MEDIAN NUMBER OF ROOMS PER RENTER OCCUPIED UNIT

AVPR7: AVERAGE NUMBER OF PERSONS PER ROOM IN YEAR ROUND OCCUPIED UNITS, 1970

AVPR8: AVERAGE NUMBER OF PERSONS PER ROOM IN YEAR ROUND OCCUPIED UNITS, 1980

AVPRC: CHANGE IN THE AVERAGE NUMBER OF PERSONS PER ROOM IN YEAR ROUND OCCUPIED UNITS

RULP8: NUMBER OF RENTER OCCUPIED HOUSING UNITS LACKING PLUMBING, 1980

RULP7: NUMBER OF RENTER OCCUPIED HOUSING UNITS LACKING PLUMBING, 1970

PLP80: PERCENTAGE OF RENTER OCCUPIED HOUSING UNITS LACKING PLUMBING, 1980

PLP70: PERCENTAGE OF RENTER OCCUPIED HOUSING UNITS LACKING PLUMBING, 1970

RULPC: CHANGE IN PERCENTAGE OF RENTER OCCUPIED HOUSING UNITS LACKING PLUMBING

VAC80: RENTAL VACANCY RATE, 1980

VAC70: RENTAL VACANCY RATE, 1970

VACCH: CHANGE IN THE RENTAL VACANCY RATE

P30Y7: PERCENTAGE RENTER OCCUPIED UNITS BUILT BEFORE 1939, 1970

P30Y8: PERCENTAGE RENTER OCCUPIED UNITS BUILT BEFORE 1949, 1980

RU30C: CHANGE IN THE PERCENTAGE OF RENTER OCCUPIED UNITS 30 YEARS OR OLDER

PMOV7: PERCENTAGE OF RENTER OCCUPIED UNITS WHERE TENANTS MOVED IN BETWEEN 3\69-70

PMOV8: PERCENTAGE OF RENTER OCCUPIED UNITS WHERE TENANTS MOVED IN BETWEEN 3\79-80

MOVCH: CHANGE IN PERCENTAGE OF RENTER OCCUPIED UNITS WHERE TENANTS MOVED IN BETWEEN 3\69-70, 3\79-80

POP80: TOTAL POPULATION, 1980

POP70: TOTAL POPULATION, 1970

POPCH: PERCENTAGE CHANGE IN POPULATION, 1970-1980

PCI80: PER CAPITA INCOME, 1980

PCI70: PER CAPITA INCOME, 1970

PCICH: CHANGE IN PER CAPITA INCOME, 1970-1980

UE80 : UNEMPLOYMENT RATE, 1980

UE70 : UNEMPLOYMENT RATE, 1970

UECH : CHANGE IN THE UNEMPLOYMENT RATE, 1970-1980

PROU7: PERCENTAGE OF RENTER OCCUPIED UNITS OUT OF TOTAL HOUSING STOCK, 1970

PROU8: PERCENTAGE OF RENTER OCCUPIED UNITS OUT OF TOTAL HOUSING STOCK, 1980

PROUC: CHANGE IN PERCENTAGE OF RENTER OCCUPIED UNITS OUT OF TOTAL HOUSING STOCK, 1970-1980

MILE : AVERAGE DISTANCE TO THE BEACH IN MILES

TABLE 7

Rent Change Equations, 1970-80

| | Equation A | | | Equation B | | |
|---|---|---|---|---|---|---|
| | Coefficient | t-Value | Significance | Coefficient | t-Value | Significance |
| INTERCEPT | 107.94 | 9.24 | 0.0001 | 101.47 | 10.72 | 0.0001 |
| MRRCH | 32.56 | 4.10 | 0.0002 | 33.08 | 4.36 | 0.0001 |
| MPRCH | -3.55 | -0.72 | 0.48 | - | - | - |
| AVPRC | 62.73 | 1.91 | 0.06 | 50.93 | 1.75 | 0.086 |
| RULPC | 2.88 | 1.08 | 0.28 | - | - | - |
| UECH | -2.49 | -1.12 | 0.27 | - | - | - |
| POPCH | 0.17 | 2.04 | 0.05 | 0.19 | 2.60 | 0.01 |
| PCICH | 0.26 | 2.94 | 0.005 | 0.27 | 3.61 | 0.001 |
| PROUC | 0.007 | 0.54 | 0.59 | - | - | - |
| MILE | -0.07 | -0.22 | 0.82 | - | - | - |
| MOVCH | 0.34 | 1.42 | 0.16 | - | - | - |
| VACCH | -0.17 | -0.17 | 0.86 | 0.70 | 0.85 | 0.40 |
| LR | -8.68 | -1.16 | 0.25 | -9.05 | -1.31 | 0.20 |
| LC | -0.32 | -0.41 | 0.68 | 0.34 | 0.46 | 0.65 |
| DU | -25.51 | -4.14 | 0.0002 | -24.27 | -4.41 | 0.0001 |
| | $R^2$=0.64 | | | $R^2$=0.56 | | |
| | $\bar{R}^2$=0.52 | | | $\bar{R}^2$=0.49 | | |
| | F =5.22 | | | F =7.86 | | |

For definitions see pp. 18-19.