The Impact of Superfund Sites on Local Property Values: Are All Sites the Same?

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The Impact of Superfund Sites on Local Property Values: Are All Sites the Same?

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Abstract

It seems an established empirical fact that Superfund sites lower local property values. Two recent literature reviews (Farber, 1998, Boyle and Kiel, 2001) report that published academic papers on the topic verify that point. The EPA's approach assumes that all sites negatively impact property values, and that the impact is similar for all sites. This paper examines 74 National Priorities List (NPL) sites in 13 U.S. counties in order to test these two implicit assumptions. Following the hedonic approach of Kiel (1995) and Kiel and McClain (1995), we find that some sites have the expected negative impact, while other sites have either no impact or a positive impact on local property values. We also consider the possibility of 'stigma' from sites by looking at those sites that have been cleaned during our sample period and find that some sites do appear to suffer from stigma, while others do not. We then use a meta-analysis approach to examine what factors affect the likelihood and extent of a decrease in property values near the sites. We find that larger sites in areas with fewer blue-collar workers are more likely to have the expected negative impact on local house prices.

JEL Classification Codes: Q51, Q53, Q58, R21

Keywords: Hedonic regressions, meta-analysis, property values

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Introduction:

It seems an established empirical fact that Superfund sites lower local property values. Two recent literature reviews (Farber, 1998, Boyle and Kiel, 2001) report that published academic papers on the topic verify that point. The U.S. Environmental Protection Agency states that “[R]eview of a number of empirical studies indicates that the negative impact of Superfund sites on property values generally ranges from two to eight percent.” (Harris, 2003). These values can then be used to estimate the economic benefits of cleaning Superfund sites (Kiel and Zabel, 2001). The EPA’s approach assumes that all sites negatively impact property values, and that the impact is similar for all sites. This paper examines 74 National Priorities List (NPL) sites in 13 U.S. counties in order to test these two implicit assumptions.

Empirical studies generally use the hedonic approach (Rosen, 1974) to examine the impact of Superfund sites on local property values. The researchers regress various house and neighborhood characteristics on the sales price (or assessed value) of houses to uncover the effect of the presumed negative externalities. As stated above, published studies confirm that Superfund sites do indeed lower local house prices. However, it is possible that studies are only published if they find the ‘expected’ results (Smith and Huang 1993). Or it is possible that researchers choose to examine sites that are more notorious, and thus are likely to be regarded as negative externalities in the community, leading again to the ‘expected’ results. Given the variation in the types of Superfund sites, it is possible that different sites are less damaging to the local area or that they may even be seen as acceptable neighbors if, for example, they are sources of employment.

This paper avoids these possible biases by examining all Superfund sites in the counties being studied to see whether the sites have the impacts reported in previous studies. The hedonic regressions that are estimated are kept as similar as possible in order to minimize the impact of different specifications on the results. We follow the methodology of Kiel (1995) and Kiel and McClain (1995) and estimate the regressions for various time periods defined by the role of the EPA in the identification and cleaning of the site. We find that some sites have the expected negative impact, while other sites have either no impact or a positive impact on local property values. We also consider the possibility of 'stigma' from sites by looking at those sites that have been cleaned during our sample period. We find that some sites do appear to suffer from stigma, while others do not.

We then use a meta-analysis approach to examine what factors affect the likelihood and extent of a decrease in property values near the sites. We find that larger sites in areas with fewer blue-collar workers are more likely to have the expected negative impact on local house prices.

This information should be helpful to the U.S. Environmental Protection Agency as they try to estimate the financial impact of cleaning such sites. It also sheds light on the Agency's ability to 'transfer' the results from previous studies to other sites that have not been studied.

Literature Review:

Previous empirical studies have concurred that Superfund sites do lower neighboring property values. Most of these papers use the hedonic approach to study the impact (see Freeman (2003) for a detailed discussion of hedonic theory). This technique assumes that houses are composites of the housing characteristics they embody (such as the number of bedrooms and lot size) as well as the neighborhood characteristics (such as distance from a toxic waste site). By regressing the various characteristics on the sales price or assessed value of the house, the estimated coefficients reveal the marginal impact of a change in that characteristic on the price of the house, holding all else constant. Thus both the sign and statistical significance of the coefficient measuring the possible impact of the Superfund site are of primary importance in these studies.

Farber (1998) reviews published papers that examined the impact of all undesirable land uses, including National Priorities List (NPL) sites. He reports on five papers on NPL sites: Adler et al (1982), Kohlhase (1991), Michaels and Smith (1990), Clark and Nieves (1994) and Greenberg and Hughes (1992). Adler et al examine a hazardous waste site in New Jersey in 1974 and report a negative impact of $9,468 per mile (1993 dollars) on local house values up to 2.25 miles away. Kolhase studies a hazardous waste site in Texas and finds a statistically significant decrease of $3,357 (1993 dollars) per mile in house prices that disappears once the site is declared by the EPA to be clean. Michaels and Smith look at hazardous waste sites in suburban Boston and find a statistically significant effect on property values that increases once the site is discovered (not all their sites are on the NPL during the period they study). They find differing impacts in areas that vary in housing quality as defined by real estate agents, reporting that prices increase by $3,310 (1993 dollars) per mile further from the site. Clark and Nieves include the number of hazardous waste sites in a county in their regression on property values and find that the impact is not statistically significant.

However, their study pre-dates Superfund. Greenberg and Hughes do not use hedonic regressions, but instead look at communities in New Jersey with and without Superfund sites and find that the communities with sites have lower rates of housing appreciation than those without such sites.

Kiel and Boyle survey hedonic studies that examine the impact of any type of environmental good on local house prices. They discuss six studies of NPL sites, three of which are also included in Farber's paper (Kolhase, Michaels and Smith, and Clark and Nieves). They also include Kiel (1995), Dale et al (1999) and Blomquist et al (1999). Kiel looks at two Superfund sites in Woburn, Massachusetts and finds a statistically significant impact on local house prices after the EPA announces that it is a Superfund site. The impact is an increase of $1,377 (1982-3 dollars) per mile from the site. Dale et al study an NPL site in Texas and get the expected results of an increase in property values as distance from the site increases. Blomquist et al include the number of Superfund sites in the county in a regression on monthly housing expenditures and get a positive estimated coefficient that is statistically significant. Their study differs from most of the others in that it includes several other pollution measures which may be highly correlated with the number of hazardous waste sites.

Thus is seems to be a generally accepted fact that Superfund sites do lower local housing values. Harris (2003) states that the EPA believes this to be true, and that the EPA uses an estimate of a decrease in values of 2-8 percent. These assumptions appear to follow the evidence reported above, and can be used to estimate some of the economic benefits of cleaning up the sites.

The authors of several of the hedonic studies have commented on whether or not Superfund sites appear to be 'stigmatized' (e.g. Kolhase, 1991, McClusky and Rausser, 2003). If local house prices completely recover after the site has been cleaned, then it would appear that the sites do not have any stigma attached to them. If, however, prices near the site continue to remain low as seen by the coefficient on distance from the site remaining positive and statistically significant well after cleaning has occurred, then the site can be seen as suffering from stigma – even though it is clean people still prefer not to locate close to it. Kolhase reports that prices recover completely after the cleaning has occurred. McClusky and Rausser find that houses very close to the site do suffer from stigma over time, while those houses further away do not.

Hedonic Model:

In order to examine the impact of Superfund sites on local house prices, we use a unique data set developed by the U.S. EPA. The data set used in this analysis includes information on real estate transactions and characteristics at the housing unit level for 20 counties across the country from 1970 to 1990.[1] Using Geographic Information System (GIS) protocols to measure distance between points, the housing data were linked to other observations in the data set. Data include (1) information on house sales in the county, including sales price and physical characteristics of each house; (2) block group level census data on income and racial characteristics of the area in 1970, 1980 and 1990; (3) environmental data on air quality, proximity to Superfund sites, proximity to hazardous

[1]The counties included are Alameda CA, Sacramento CA, San Diego CA, Santa Clara CA, Dade FL, Broward FL, Hillsborough FL, Pinellas FL, Fulton GA, DeKalb GA, Clayton GA, Cobb GA, St. Louis MO, Hamilton OH, Cuyahoga OH, Allegheny, PA, Fairfax VA, Arlington VA, King WA, and Milwaukee WI.

waste sites, distance to the nearest water body; and (4) information on neighborhood amenities. The housing data were obtained from a vendor who geocoded the data so that other spatial data could be added. In the data set, Census data from 1970, 1980 and 1990[2] were linked to the housing data by year of sale. The block group was used as the key for linking the appropriate demographic data with the house record.[3]

The data set also includes additional neighborhood variables, including landmark data on trailer courts, jails, prisons, educational institutions, employment centers, and national parks. Not all items are available for all counties, so these variables were not used in this study for the sake of consistency.

A number of pollution variables are also included in the full data set. In following most other researchers, we have chosen to include only information on Superfund sites. NPL variables available in the data set include information on the date of discovery, proposal, listing, and remedial action; total size of the site; distance in miles from the nearest NPL site to house; year waste treatment, storage, or disposal began at the site; and the year waste treatment, storage, or disposal ended at the site[4].

We use the estimation approach developed by Kiel and McClain (1995) and Kiel (1995). Those studies assumed that changes in information about the site that were available to the public would change the impact of the site on local house prices. Thus

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[2]The 1990 Census data were obtained from block group data files in the GNU compressed ArcInfo format from the EPA Intranet (epawww.epa.gov/STF3A/www/html/stf3a_mosaic.html) and from TigerLine 1994 files containing 1990 boundaries. An index field containing the state FIPS code, county FIPS code, census tract code, and census block group code was used to link the block group geospatial layers to the demographic tables containing the STF3A data.

[3]The spatial data were used to identify the 1990 block groups associated with a specific house address using the latitude/longitude available on the housing data record.

[4]NPL data were extracted from the RELAI Database. Additional data describing site locations, dates of actions, sizes of surrounding populations, risk values, and hazard index values, were derived from various sources: the RPM Survey, CERCLIS, the NPL Book, RID, SETS, and SNAP.

the authors estimate hedonic regressions for several different time periods, as determined by the site's stage in the NPL or siting process. Following Kiel, we divide time into six periods: prior to discovery (the stage where the site is first considered by the EPA for possible listing), from discovery to the date the site is proposed for the NPL, from proposal to the date the site is officially listed on the NPL, from official listing to the official commencement of cleanup (as stated by the EPA), from the commencement of cleanup to the date the site is removed from the NPL, and finally the period following removal from the NPL. Many of the sites do not list an official beginning to the cleanup and/or are not removed from the NPL during our sample period, meaning that either or both of these latter two periods are not separately estimated for all sites.

Our hedonic regression is specified so as to be as similar as possible across the different county data sets (see Table 1 for variable definitions and some descriptive statistics for one site). The regression we estimate is:

$$\begin{aligned} Ln\,Price = {} & a + b1(Bedrooms) + b2(Fullbath) + b3(Age) + b4(Age^2) + b5(Bldgarea) + b6(Firedum) \\ & + b7(Pooldum) + b8(Airdum) + b9(Parkdum) + b10(\ln Inc) + b11(Pownocc) \\ & + b12(Pnwht) + b13(Punemp) + b14(Ppolcol) + b15(\ln Dist) + b16(Yxx) + \ldots.. \end{aligned}$$

The first five variables are included in all regressions, as are the relevant sale-year dummies.5 The amenity coefficients (b6 through b9) are not estimated for some regressions due to insufficient data. Insufficient census data (variables corresponding to coefficients b10 through b14) prevent their inclusion in a handful of regressions; these are indicated in Table 3 by stars placed in the "SITE" field.

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5 In counties where building area is not available, the area of the entire lot is used.

The twenty county-level data sets included information on 74 NPL sites in 13 of the counties. For a given site, only houses within three miles of the site are included, as numerous studies (e.g. Adler et al, Kohlhase, Kiel) have shown that an NPL site's effect on housing prices diminishes greatly at distances greater than three miles. To nullify the effect of tax differences amongst cities, the data set for a given NPL site is further limited to include data from only a single city, usually that in which the site is located. Also, due to the fact that a particular house is linked only to that NPL site which it is closest to, the simultaneous effects of multiple NPL sites upon any given area could not be gauged.

This preliminary cleaning of data eliminated 17 of the 74 sites from consideration. Some sites were excluded because the population density within their three-mile radius was too low, so that the site lacked a sufficiently large number of nearby house sales. Some sites located near to other sites possessed an insufficiently large number of observations because surrounding houses would be coded to the other, closer site.

Data for the remaining 57 sites are partitioned into the six time frames as mentioned previously. To eliminate potential outliers, we exclude the top and bottom five percent of house sales ranked by sales price. A procedure is also undertaken to eliminate data points that are particularly influential in the regression[6]. Since we are using cross-sectional data, procedures were undertaken to correct the standard errors for heteroskedasticity[7]. While not altering the estimator for the coefficient on NPLDIST, the correction does adjust the level of significance (shown as "Chi²" in Table 2 and 3).

6 The SAS procedure is DFFITS which considers the change in the predicted sales price when each observation is dropped. If the statistic is greater than 2, the observation is dropped (SAS User's Guide, page 1419).

7 The SAS procedure is ACOV that estimates a covariance matrix under the assumption of heteroskedasticity.

Hedonic Results:

In Tables 1 and 2 we report the summary statistics and the estimated coefficients from the hedonic regressions for one site, the Petroleum Products Corporation of Pembroke Park, Florida.[8] This company's site, based in Broward County, was selected because it is similar to many previous studies; it finds a positive and significant coefficient for NPL distance in the period following official NPL listing, a significance that disappears once cleanup is undertaken.

The site became polluted through the improper disposal of chemicals, such as sulfuric acid that was used to refine waste oil, as well as through leaks of the oil itself. The contamination, which occurred between 1952 and 1972, bore the added social cost of polluting the aquifer beneath the site, from which many surrounding towns derived their water supplies. Though the EPA succeeded in forcing the company to remove all of its drums, tanks, and other surface pollutants in 1987, the site has remained contaminated due to the seepage of the pollutants. This explains the positive significance of NPL distance on housing prices in the period between 1988 and 1992. Since 1987, the tactics used to recover the spilled oil and associated sludge have grown more elaborate, and even now the site has not been removed from the NPL. However, one could assume that, by 1993, local housing buyers considered the site to be clean enough to discount it from their buying decision, given the insignificance of the coefficient on distance to the NPL site in the final regression period.

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8 Information on this site comes from the EPA website's various profiles of the site. The regression results for the other sites are available from the authors upon request.

Since our primary focus is on the effect of the official NPL listing on housing prices, we present the estimated coefficients on the log of distance to the nearest site for each of the periods and each of the sites in Table 3 (complete results available from the authors upon request). Of the 57 regressions for these sites, 18 produce statistically significant ($Chi^2 < .05$) and positive correlations between LNDIST and sale price, that is, increases in the log of distance from the site increased the homes' value after the site was listed on the NPL. Seven produce significantly negative correlations, and the remaining 32 are not statistically significant at the 5% level. While only 18 of the 57 sites create a clear decrease in housing prices once they were placed on the NPL, it should be noted that 33 of the 57 sites negatively affect prices at some point during their existence.

Overall, the adjusted R^2s for the regressions range from a low of –2.1266 in Hillsborough in 1983 (with 16 observations) to a high of 0.9921 in Times Beach in 1982 (with only 9 observations). Surprisingly, there does not seem to be a consistent replication of previous studies where the announcement by the EPA that a site would be placed on the NPL showed that house values were lower closer to the site. Some sites appear to not affect the local house values (e.g. the three sites in Allegheny), while others appear to be positive externalities that actually increase local house values (e.g. the Plant City and Valrico sites in Hillsborough).

For the 18 sites that produce positive and statistically significant coefficients on LNDIST, we report the dollar value and percentage impact on house prices (see Table 4). The former is calculated by multiplying the estimated coefficient by the ratio of the mean sales price to the mean distance in that county during that period. The percentage impacts range from a low of 0.94% to a high of 92.06% with a mean of 16.26% and a median between 6.34 to 7.52 %; thus the impacts can be greater than the two to eight percent range suggested by the EPA but that could be due to unusual sites.

Our data also allow us to examine our sites for possible stigma effects. We have four sites with data from all six periods; these are sites that have been ‘cleaned’ by the EPA during our sample period. The Hollingsworth Solderless Terminal in Fort Lauderdale was cleaned by 1992 so we have four years of house sales past that date. The site was seen as a negative externality in earlier periods, and remained so even after cleaning. Thus it would appear that this site suffers from stigma. This finding is in line with McCluskey and Rausser who reported that stigma existed within 1.2 miles of a cleaned site.

The Miami Gold Coast site was cleaned by 1991 so we have data for the following five years. This site was seen as a negative externality in the third period, but had no impact on house prices during the cleaning period nor during the period after that. In fact, it becomes a positive externality (statistically significant at the 5% level) once cleaning is complete. Thus this site does not appear to have any stigma attached to it. This is similar to Kohlhase’s finding that the premium for distance from such a site disappears once the site is cleaned.

Two other sites (Jibboom in Sacramento and Intel in Santa Clara) are never seen as either positive or negative externalities. Thus cleaning these sites appears to have no impact on local prices. Our results thus indicate that cleaning sites does not automatically remove stigma, although in some cases stigma might not be an issue. It appears that each site is unique in this regard. It appears that the two other previous studies that looked at stigma are correct for their sites, but that policy analysis must remember that sites can vary.

Meta-Analysis:

We find that some Superfund sites do have a negative effect on local property values, while others do not. In order to explore why this might be, we use a meta-analysis. This approach has been used by others (e.g. Smith and Huang (1993) who study hedonic models that examine the impact of air pollution on house values) to categorize groups of previous studies. We use the technique in a slightly different way; we have 57 sites that we have examined in a similar time frame and using a similar model specification. We then look to see if differences in the sites can help explain differences in the results.

The dependent variable in our meta-analytical model is a dummy variable (FOURTH) which is set equal to one for those sites whose coefficients on LNDIST were positive and significant for the period following official NPL listing, and is equal to zero if the estimated coefficient is negative or statistically insignificant. The independent variables include the size of the site, the nature of the site, the number of observations in the hedonic regression, and whether or not the site was ever perceived as a negative externality (as indicated by a positive and statistically significant coefficient on NPLDIST in any of the hedonic regressions from an earlier period) (see Table 5 for a complete list of variables and their means and standard deviations).

This model was applied to 55 of the 57 sites listed above (Moss-American in Milwaukee County and Valley Park TCE in St. Louis County lacked sufficient data regarding the size of the site), with 18 of the sites having been determined as having coefficients on LNDIST that are positive and significant. The regression is estimated using a probit model (see Table 6 for results.)

The meta-analysis reveals that the size of the site is positively related to obtaining a positive and statistically significant coefficient on distance from the site in the first regression, i.e. the larger the site, the more likely it is to have a negative influence on local sales prices. The number of observations is also positively related and marginally significant, i.e. sites with a greater number of nearby home sales (and thus sites with higher surrounding population densities) tend to detract more from housing values. Hedonic regressions with larger sample sizes are more likely to yield the expected results. Larger sample sizes in our case mean more houses sold within the three mile radius; the site is not likely to have another site near it. The adjusted R^2 from the original hedonic regression is positively correlated, suggesting that houses whose prices better fit a standard model (one taking into account size, number of rooms, etc.) are more likely to have their values detracted by neighboring NPL sites.

The percentage of blue-collar residents in the county over the sample period is negatively correlated. This implies that the residents of blue-collar areas are less concerned with pricing in the effects of NPL proximity, possibly because their smaller incomes do not allow them the leverage to price this in. Sites which depressed housing values in periods prior to NPL listing tended to continue to depress them in the period following listing, implying that people purchasing homes in the prior periods already understood the disamenity presented by the sites and included this in their purchasing decision.

Conclusions:

Based on the data generated through this study, it is the authors' opinions that, due to the widely varying affects that NPL sites have on nearby housing prices, it may not be in the best interests of the EPA to adopt a "one size fits all" formula for estimating the financial benefits from the cleanup of a given site. Any given NPL site possesses a body of characteristics that sets it apart from all others: its size, location, relative level of contamination, etc. It appears in many cases that a certain site's characteristics will not raise sufficient enough alarm in the mind of homebuyers for them to incorporate the site's existence into their pricing decisions. Indeed, in a small number of cases, the immediate proximity of the site may in fact be an attraction, reflected in negative significance on LNDIST for seven of fifty-seven sites in our regressions. Thus it is relatively clear, at least from our data, that not all NPL sites produce a negative effect on housing prices, nor do they necessarily produce similar impacts on local housing prices.

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Table 1
Variable Names for Hedonic Regressions

Name	Definition	Means and Standard Deviations for Petroleum Products Corp. (Entire Period 1971-1996, N = 8057)
LNPRICE	Log of Sales Price	Mean = 11.021; STD = .959
BEDROOMS	Number of Bedrooms	Mean = 2.550; STD = .638
FULLBATH	Number of Full Bathrooms	Mean = 1.263; STD = .976
AGE	Age of House	Mean = 28.66; STD = 13.94
AGE2	Squared Age of House	Mean = 1015.83; STD = 1287.83
BLDGAREA	Building Area (square feet)	Mean = 1659.63; STD = 641.22
FIREDUM	=1 if House has Fireplace	N/A
POOLDUM	=1 if House has Pool	Mean = .266; STD = .442
AIRDUM	=1 if House has Central Air	N/A
PARKDUM	=1 if House has Garage or Similar Structure	N/A
LNINC	Log of Median Family Income of Census Tract	Mean = 10.379; STD = .430
POWNOCC	Percent of Houses in Census Tract that are Owner-Occupied	Mean = 72.68; STD = 19.86
PNWHT	Percent of Non-white Residents in Census Tract	Mean = 15.31; STD = 23.42
PUNEMP	Unemployment Rate in Census Tract	Mean = 6.333; STD = 7.394
PPOPCOL	Percent of Census Tract Residents with College Education	Mean = 33.57; STD = 11.56
LNDIST	Log of Distance from House to Nearest NPL Site (in miles)	Mean = .702; STD = .362
YXX	Year of Sale Dummy Variables	(Done for individual period regressions)

Name	Definition	Means and Standard Deviations for the Post-Final Listing, Pre-Cleanup Commencement Period

		(1988-1992, N = 2130)
LNPRICE	Log of Sales Price	Mean = 11.272; STD = .368
BEDROOMS	Number of Bedrooms	Mean = 2.502; STD = .591
FULLBATH	Number of Full Bathrooms	Mean = 1.199; STD = .930
AGE	Age of House	Mean = 30.83; STD = 10.46
AGE2	Squared Age of House	Mean = 1059.73; STD = 965.82
BLDGAREA	Building Area (square feet)	Mean = 1582.69; STD = 526.05
FIREDUM	=1 if House has Fireplace	N/A
POOLDUM	=1 if House has Pool	Mean = .248; STD = .432
AIRDUM	=1 if House has Central Air	N/A
PARKDUM	=1 if House has Garage or Similar Structure	N/A
LNINC	Log of Median Family Income of Census Tract	Mean = 10.464; STD = .330
POWNOCC	Percent of Houses in Census Tract that are Owner-Occupied	Mean = 71.45; STD = 20.14
PNWHT	Percent of Non-white Residents in Census Tract	Mean = 15.23; STD = 21.19
PUNEMP	Unemployment Rate in Census Tract	Mean = 6.335; STD = 4.442
PPOPCOL	Percent of Census Tract Residents with College Education	Mean = 34.84; STD = 9.68
LNDIST	Log of Distance from House to Nearest NPL Site (in miles)	Mean = .700; STD = .352
Y88, Y89, Y90, Y91	Year of Sale Dummy Variables	Mean (Y88) = .183; STD (Y88) = .386 Mean (Y89) = .202; STD (Y89) = .401 Mean (Y90) = .203; STD (Y90) = .402 Mean (Y91) = .185; STD (Y91) = .388 *Approx. 22.8% of houses sold in 1992 (1 – Sum of above means)

TABLE 2
Hedonic Results for Petroleum Products Corporation
(Individual Periods)
NOTE: Since the top and bottom 5% of houses according to price are dropped for each individual period regression, the sum of the samples below makes up only 90% of the overall sample in Table 1.

Coefficient Estimates and Standard Deviations for the Pre-Discovery Period (1971-1982, N = 1796, Adj. R^2 = .7681, Mean of LNPRICE = 10.632, STD = .432)

VARIABLE	DF	ESTIMATE	STD	T-STAT	PROB.
INTERCEP	1	11.512924	0.26931736	42.749	0.0001
BEDROOMS	1	0.048993	0.01086856	4.508	0.0001
FULLBATH	1	-0.003994	0.00783223	-0.510	0.6101
AGE	1	-0.010250	0.00140028	-7.320	0.0001
AGE2	1	0.000087612	0.00001358	6.451	0.0001
BLDGAREA	1	0.000270	0.00001410	19.169	0.0001
POOLDUM	1	0.088803	0.01345177	6.602	0.0001
LNINC	1	-0.133457	0.02804901	-4.758	0.0001
POWNOCC	1	0.001091	0.00042034	2.594	0.0096
PNWHT	1	-0.001515	0.00035154	-4.309	0.0001
PUNEMP	1	-0.002231	0.00498163	-0.448	0.6543
PPOPCOL	1	0.013684	0.00093197	14.683	0.0001
LNDIST	1	0.020784	0.01413737	1.470	0.1417
Y71	1	-0.897903	0.03919512	-22.909	0.0001
Y72	1	-0.822560	0.03605240	-22.816	0.0001
Y73	1	-0.621989	0.03731395	-16.669	0.0001
Y74	1	-0.511855	0.03315575	-15.438	0.0001
Y75	1	-0.541350	0.03253471	-16.639	0.0001
Y76	1	-0.544634	0.02966266	-18.361	0.0001
Y77	1	-0.484352	0.02724271	-17.779	0.0001
Y78	1	-0.372800	0.02687220	-13.873	0.0001
Y79	1	-0.217260	0.02652509	-8.191	0.0001
Y80	1	-0.080444	0.02828868	-2.844	0.0045
Y81	1	0.020240	0.02929361	0.691	0.4897

Coefficient Estimates and Standard Deviations for the Post-Discovery, Pre-Proposal Period (1983-1984, N = 326, Adj. R^2 = .7557, Mean of LNPRICE = 11.096, STD = .370)

VARIABLE	DF	ESTIMATE	STD	T-STAT	PROB.
INTERCEP	1	10.004314	0.59363076	16.853	0.0001
BEDROOMS	1	0.026132	0.02450833	1.066	0.2871
FULLBATH	1	0.000563	0.01634697	0.034	0.9725
AGE	1	-0.010733	0.00307839	-3.487	0.0006
AGE2	1	0.000124	0.00003136	3.959	0.0001

BLDGAREA	1	0.000312	0.00002946	10.607	0.0001
POOLDUM	1	0.117594	0.02956589	3.977	0.0001
LNINC	1	0.044112	0.06143920	0.718	0.4733
POWNOCC	1	0.000766	0.00081407	0.941	0.3473
PNWHT	1	-0.002855	0.00087650	-3.257	0.0012
PUNEMP	1	-0.007525	0.00959813	-0.784	0.4337
PPOPCOL	1	0.005139	0.00186979	2.749	0.0063
LNDIST	1	0.055472	0.03473437	1.597	0.1113
Y83	1	-0.014142	0.02085461	-0.678	0.4982

Coefficient Estimates and Standard Deviations for the Post-Proposal, Pre-Final Listing Period (1985-1987, N = 889, Adj. R^2 = .7500, Mean of LNPRICE = 11.177, STD = .366)

VARIABLE	DF	ESTIMATE	STD	T-STAT	PROB.
INTERCEP	1	10.048968	0.37615958	26.715	0.0001
BEDROOMS	1	0.019635	0.01485406	1.322	0.1866
FULLBATH	1	0.024528	0.01041393	2.355	0.0187
AGE	1	-0.002016	0.00184821	-1.091	0.2757
AGE2	1	0.000014624	0.00001732	0.844	0.3988
BLDGAREA	1	0.000321	0.00001869	17.158	0.0001
POOLDUM	1	0.112426	0.01644911	6.835	0.0001
LNINC	1	0.025143	0.03907054	0.644	0.5201
POWNOCC	1	0.000097534	0.00047730	0.204	0.8381
PNWHT	1	-0.000258	0.00046039	-0.561	0.5748
PUNEMP	1	-0.004782	0.00374900	-1.275	0.2025
PPOPCOL	1	0.007429	0.00127804	5.813	0.0001
LNDIST	1	0.095552	0.02091200	4.569	0.0001
Y85	1	-0.092918	0.01645946	-5.645	0.0001
Y86	1	-0.044757	0.01449740	-3.087	0.0021

Coefficient Estimates and Standard Deviations for the Post-Final Listing, Pre-Cleanup Commencement Period (1988-1992, N = 2130, Adj. R^2 = .7562, Mean of LNPRICE = 11.272, STD = .368)

VARIABLE	DF	ESTIMATE	STD	T-STAT	PROB.
INTERCEP	1	9.047306	0.24985358	36.210	0.0001
BEDROOMS	1	-0.004950	0.00946402	-0.523	0.6010
FULLBATH	1	0.020357	0.00667709	3.049	0.0023
AGE	1	-0.006143	0.00114362	-5.371	0.0001
AGE2	1	0.000065423	0.00001190	5.499	0.0001
BLDGAREA	1	0.000341	0.00001210	28.174	0.0001
POOLDUM	1	0.107040	0.01077468	9.934	0.0001
LNINC	1	0.151099	0.02516218	6.005	0.0001
POWNOCC	1	0.000178	0.00028867	0.616	0.5380
PNWHT	1	-0.001933	0.00030600	-6.316	0.0001
PUNEMP	1	0.000770	0.00109417	0.703	0.4819
PPOPCOL	1	0.005578	0.00067102	8.312	0.0001
LNDIST	1	0.048643	0.01460021	3.332	0.0009
Y88	1	-0.073980	0.01396016	-5.299	0.0001

Y89	1	-0.043572	0.01322027	-3.296	0.0010
Y90	1	-0.028191	0.01248206	-2.259	0.0240
Y91	1	-0.015637	0.01264040	-1.237	0.2162

Coefficient Estimates and Standard Deviations for the Post-Cleanup Commencement Period (1993-1996, N = 2124, Adj. R^2 = .6359, Mean of LNPRICE = 11.355, STD = .391)

VARIABLE	DF	ESTIMATE	STD	T-STAT	PROB.
INTERCEP	1	9.576101	0.27220678	35.180	0.0001
BEDROOMS	1	0.021141	0.01174153	1.800	0.0719
FULLBATH	1	0.009435	0.00833579	1.132	0.2578
AGE	1	-0.002501	0.00265446	-0.942	0.3461
AGE2	1	-0.000026425	0.00004026	-0.656	0.5117
BLDGAREA	1	0.000326	0.00001605	20.303	0.0001
POOLDUM	1	0.094520	0.01398428	6.759	0.0001
LNINC	1	0.119203	0.02648180	4.501	0.0001
POWNOCC	1	0.000570	0.00031897	1.788	0.0739
PNWHT	1	-0.002808	0.00031427	-8.934	0.0001
PUNEMP	1	-0.001020	0.00058124	-1.755	0.0795
PPOPCOL	1	0.003399	0.00058983	5.762	0.0001
LNDIST	1	0.009282	0.01848543	0.502	0.6156
Y93	1	-0.075126	0.02081898	-3.609	0.0003
Y94	1	-0.062662	0.02053307	-3.052	0.0023
Y95	1	-0.017802	0.02001784	-0.889	0.3739

TABLE 3

SITE	COUNTY	CITY	TIME	N	ADJ R^2	LNDIST	Chi^2Prob.
LIVERMORE	ALAMEDA	LIVERMORE	71-80	124	0.5913	-0.0422	0.7443
LIVERMORE	ALAMEDA	LIVERMORE	81-84	112	0.2682	0.1510	0.5361
LIVERMORE	ALAMEDA	LIVERMORE	85-87	203	0.3358	-0.0637	0.5232
LIVERMORE	ALAMEDA	LIVERMORE	88-92	762	0.5765	-0.0347	0.3760
LIVERMORE	ALAMEDA	LIVERMORE	93-96	611	0.4971	-0.0223	0.5723
HARRISON TWP	ALLEGHENY	NATRONA HEIGHTS	74-79	108	0.3189	-0.0928	0.4814
HARRISON TWP	***ALLEGHENY***	***NATRONA HEIGHTS***	***80-81***	***26***	***0.8165***	***-0.3537***	***0.0012***
HARRISON TWP	**ALLEGHENY**	**NATRONA HEIGHTS**	**82-83**	**18**	**0.8562**	**0.6442**	**0.0000**
HARRISON TWP	ALLEGHENY	NATRONA HEIGHTS	84-94	169	0.5457	0.0556	0.2822
JEFFERSON BORO	**ALLEGHENY**	**CLAIRTON**	**74-78**	**57**	**0.6751**	**0.8908**	**0.0004**
JEFFERSON BORO	***ALLEGHENY***	***CLAIRTON***	***79-82***	***30***	***0.8444***	***-2.0938***	***0.0000***
JEFFERSON BORO	ALLEGHENY	CLAIRTON	83	8*	N/A	N/A	N/A
JEFFERSON BORO	ALLEGHENY	CLAIRTON	84-94	185	0.5539	0.1106	0.3527
NEVILLE ISLAND	**ALLEGHENY**	**CORAOPOLIS**	**73-78**	**93**	**0.3554**	**0.3713**	**0.0412**
NEVILLE ISLAND	ALLEGHENY	CORAOPOLIS	79-89	150	0.5656	-0.2845	0.1319
NEVILLE ISLAND	ALLEGHENY	CORAOPOLIS	90	18	0.8707	0.7900	0.0656
NEVILLE ISLAND	ALLEGHENY	CORAOPOLIS	91-94	101	0.8074	-0.0216	0.7349
*DAVIE	BROWARD	DAVIE	71-79	64	0.4359	-0.0639	0.6596
*DAVIE	BROWARD	DAVIE	80-81	16	0.6542	0.0300	0.9019
*DAVIE	BROWARD	DAVIE	82-83	6*	N/A	N/A	N/A
*DAVIE	BROWARD	DAVIE	84-87	423	0.3798	-0.0551	0.4059
****DAVIE***	***BROWARD***	***DAVIE***	***88-96***	***1372***	***0.6737***	***-0.0812***	***0.0009***
***FT. LAUDERDALE (HOLLING…)**	**BROWARD**	**FT. LAUDERDALE**	**71-80**	**1003**	**0.7888**	**0.0948**	**0.0000**
*FT. LAUDERDALE (HOLLING…)	BROWARD	FT. LAUDERDALE	81	61	0.6835	0.0349	0.5746
*FT. LAUDERDALE (HOLLING…)	BROWARD	FT. LAUDERDALE	82-83	158	0.8362	0.0229	0.4887
***FT. LAUDERDALE (HOLLING…)**	**BROWARD**	**FT. LAUDERDALE**	**84-87**	**646**	**0.8277**	**0.0638**	**0.0000**
***FT. LAUDERDALE (HOLLING…)**	**BROWARD**	**FT. LAUDERDALE**	**88-92***	**1206**	**0.8042**	**0.1130**	**0.0000**
***FT. LAUDERDALE (HOLLING…)**	**BROWARD**	**FT. LAUDERDALE**	**93-96**	**1408**	**0.7420**	**0.1553**	**0.0000**
FT. LAUDERDALE (WINGATE…)	BROWARD	FT. LAUDERDALE	71-81	1330	0.5752	0.0006	0.9768
FT. LAUDERDALE (WINGATE…)	BROWARD	FT. LAUDERDALE	82-87	703	0.4376	-0.0061	0.8547
FT. LAUDERDALE (WINGATE…)	**BROWARD**	**FT. LAUDERDALE**	**88-89**	**399**	**0.5531**	**0.0760**	**0.0358**
FT. LAUDERDALE (WINGATE…)	**BROWARD**	**FT. LAUDERDALE**	**90-96**	**1815**	**0.2792**	**0.0770**	**0.0005**
PEMBROKE PARK	BROWARD	HOLLYWOOD	71-82	1796	0.7681	0.0208	0.1170
PEMBROKE PARK	BROWARD	HOLLYWOOD	83-84	326	0.7557	0.0555	0.1174

PEMBROKE PARK	**BROWARD**	**HOLLYWOOD**	**85-87**	**889**	**0.7500**	**0.0956**	**0.0000**
PEMBROKE PARK	**BROWARD**	**HOLLYWOOD**	**88-92**	**2130**	**0.7562**	**0.0486**	**0.0066**
PEMBROKE PARK	BROWARD	HOLLYWOOD	93-96	2124	0.6359	0.0093	0.6439
POMPANO BEACH (CHEM…)	BROWARD	POMPANO BEACH	71-78	139	0.6838	0.2258	0.4840
POMPANO BEACH (CHEM…)	**BROWARD**	**POMPANO BEACH**	**79-87**	**192**	**0.6384**	**0.6995**	**0.0123**
POMPANO BEACH (CHEM…)	**BROWARD**	**POMPANO BEACH**	**88-89**	**86**	**0.8623**	**1.4507**	**0.0020**
POMPANO BEACH (CHEM…)	**BROWARD**	**POMPANO BEACH**	**90-92**	**143**	**0.5626**	**1.7620**	**0.0144**
POMPANO BEACH (CHEM…)	BROWARD	POMPANO BEACH	93-96	210	0.4650	0.3755	0.3060
POMPANO BEACH (WILSON…)	**BROWARD**	**POMPANO BEACH**	**71-85**	**316**	**0.7691**	**0.3867**	**0.0000**
POMPANO BEACH (WILSON…)	BROWARD	POMPANO BEACH	86-87	101	0.4962	0.1103	0.2565
POMPANO BEACH (WILSON…)	BROWARD	POMPANO BEACH	88	51	0.7459	0.1030	0.1414
POMPANO BEACH (WILSON…)	**BROWARD**	**POMPANO BEACH**	**89-91**	**187**	**0.5967**	**0.2390**	**0.0006**
POMPANO BEACH (WILSON…)	**BROWARD**	**POMPANO BEACH**	**92-96**	**421**	**0.5657**	**0.2987**	**0.0000**
CLEVELAND	CUYAHOGA	NON-NPL SITE	N/A	N/A	N/A	N/A	N/A
HIALEAH (B&B...)	DADE	HIALEAH	71-85	2395	0.8001	0.0220	0.0532
HIALEAH (B&B...)	**DADE**	**HIALEAH**	**86-87**	**469**	**0.2455**	**0.0683**	**0.0009**
HIALEAH (B&B...)	DADE	HIALEAH	88-90	557	0.3508	0.0228	0.1791
HIALEAH (B&B...)	**DADE**	**HIALEAH**	**91-96**	**1012**	**0.4024**	**0.0422**	**0.0071**
HIALEAH (NORTHWEST...)	DADE	IO	N/A	N/A	N/A	N/A	N/A
HIALEAH (STANDARD...)	DADE	HIALEAH	71-81	654	0.6200	-0.0146	0.5098
HIALEAH (STANDARD...)	DADE	HIALEAH	82-87	370	0.2717	-0.0473	0.1127
HIALEAH (STANDARD...)	DADE	HIALEAH	88-89	148	0.2445	-0.0680	0.4507
HIALEAH (STANDARD...)	DADE	HIALEAH	90-93	225	0.5050	0.0081	0.7108
HIALEAH (STANDARD...)	DADE	HIALEAH	94-96	161	0.1133	-0.1163	0.1959
HOMESTEAD AFB	DADE	IO	N/A	N/A	N/A	N/A	N/A
MEDLEY	**DADE**	**HIALEAH**	**71-79**	**246**	**0.6880**	**0.2129**	**0.0230**
MEDLEY	DADE	HIALEAH	80-83	141	0.5177	0.5091	0.1584
MEDLEY	DADE	HIALEAH	84	49	0.7656	0.1665	0.5250
MEDLEY	**DADE**	**HIALEAH**	**85-86**	**160**	**0.7262**	**0.3556**	**0.0015**
MEDLEY	**DADE**	**HIALEAH**	**87-96**	**3059**	**0.8186**	**0.0800**	**0.0000**
MIAMI (AIRCO...)	**DADE**	**MIAMI**	**71-80**	**853**	**0.3712**	**0.2012**	**0.0000**
MIAMI (AIRCO...)	**DADE**	**MIAMI**	**81-87**	**640**	**0.4339**	**0.1706**	**0.0000**
MIAMI (AIRCO...)	DADE	MIAMI	88-89	204	0.3987	0.0868	0.0610
MIAMI (AIRCO...)	DADE	MIAMI	90-96	737	0.3571	0.0299	0.3449
MIAMI (ANACONDA...)	***DADE***	***MIAMI***	***71-80***	***1794***	***0.4547***	***-0.0461***	***0.0027***
MIAMI (ANACONDA...)	DADE	MIAMI	81-89	1410	0.3046	-0.0134	0.6205
MIAMI (ANACONDA...)	DADE	MIAMI	90	175	0.3163	0.0397	0.3025
MIAMI (ANACONDA...)	DADE	MIAMI	91-96	954	0.3311	-0.0042	0.8361

***MIAMI (GOLD COAST...)**	**DADE**	**MIAMI**	**71-80**	**4176**	**0.6731**	**0.0232**	**0.0000**
*MIAMI (GOLD COAST...)	DADE	MIAMI	81	282	0.1984	0.0064	0.8230
*MIAMI (GOLD COAST...)	DADE	MIAMI	82-83	631	0.3199	-0.0133	0.3860
***MIAMI (GOLD COAST...)**	**DADE**	**MIAMI**	**84-88**	**2815**	**0.4288**	**0.0156**	**0.0140**
*MIAMI (GOLD COAST...)	DADE	MIAMI	89-91*	1483	0.6263	-0.0012	0.8657
*MIAMI (GOLD COAST...)	DADE	MIAMI	92-96	2454	0.4868	-0.0147	0.0507
MIAMI (MIAMI DRUM...)	DADE	IO	N/A	N/A	N/A	N/A	N/A
MIAMI (VARSOL SPILL)	**DADE**	**MIAMI**	**71-79**	**444**	**0.6015**	**0.2356**	**0.0055**
MIAMI (VARSOL SPILL)	DADE	MIAMI	80-81	58	0.3227	-0.0530	0.5597
MIAMI (VARSOL SPILL)	DADE	MIAMI	82-84*	107	0.1111	0.1171	0.2598
MIAMI (VARSOL SPILL)	DADE	MIAMI	85-96	699	0.5279	0.0143	0.6145
NORTH MIAMI (MUNISPORT...)	DADE	NORTH MIAMI	71-78	357	0.7487	0.0416	0.3245
NORTH MIAMI (MUNISPORT...)	DADE	NORTH MIAMI	79-82	233	0.6854	-0.0237	0.7256
NORTH MIAMI (MUNISPORT...)	DADE	NORTH MIAMI	83	70	0.6948	0.2428	0.1570
NORTH MIAMI (MUNISPORT...)	***DADE***	***NORTH MIAMI***	***84-94***	***1642***	***0.7916***	***-0.1355***	***0.0000***
NORTH MIAMI (MUNISPORT...)	DADE	NORTH MIAMI	95-96	283	0.5810	0.0032	0.9787
NORTH MIAMI BEACH	***DADE***	***MIAMI***	***71-84***	***3315***	***0.7394***	***-0.0172***	***0.0192***
NORTH MIAMI BEACH	DADE	MIAMI	85-87	1510	0.5630	-0.0058	0.5572
NORTH MIAMI BEACH	DADE	MIAMI	88-89	1322	0.6029	-0.0091	0.3486
NORTH MIAMI BEACH	DADE	MIAMI	90-96	3634	0.5723	-0.0073	0.2665
PRINCETON	***DADE***	***HOMESTEAD***	***71-78***	***214***	***0.6590***	***-0.2176***	***0.0001***
PRINCETON	***DADE***	***HOMESTEAD***	***79-87***	***340***	***0.5387***	***-0.1685***	***0.0017***
PRINCETON	***DADE***	***HOMESTEAD***	***88-90***	***241***	***0.4290***	***-0.0670***	***0.0181***
PRINCETON	DADE	HOMESTEAD	91-92*	201	0.7360	0.0421	0.2155
PRINCETON	DADE	HOMESTEAD	93-96	392	0.1859	0.0507	0.3125
FERNALD	HAMILTON	IO	N/A	N/A	N/A	N/A	N/A
READING	HAMILTON	CINCINNATI	76-78	409	0.7145	-0.0030	0.9059
READING	HAMILTON	CINCINNATI	79-82	349	0.4164	-0.0041	0.9278
READING	HAMILTON	CINCINNATI	83	196	0.6877	-0.0052	0.9362
READING	**HAMILTON**	**CINCINNATI**	**84-91**	**2580**	**0.6341**	**0.0347**	**0.0111**
READING	**HAMILTON**	**CINCINNATI**	**92-95**	**1561**	**0.5943**	**0.1058**	**0.0000**
PLANT CITY	**HILLSBOROUGH**	**PLANT CITY**	**71-79**	**402**	**0.3759**	**0.1514**	**0.0256**
PLANT CITY	***HILLSBOROUGH***	***PLANT CITY***	***80-82***	***158***	***0.2790***	***-0.2947***	***0.0323***
PLANT CITY	***HILLSBOROUGH***	***PLANT CITY***	***83***	***61***	***0.6133***	***-0.5871***	***0.0387***
PLANT CITY	***HILLSBOROUGH***	***PLANT CITY***	***84-91***	***1322***	***0.4961***	***-0.1921***	***0.0001***
PLANT CITY	HILLSBOROUGH	PLANT CITY	92-95	1038	0.4049	-0.0873	0.1909
SEFFNER	**HILLSBOROUGH**	**SEFFNER**	**71-79**	**455**	**0.5125**	**0.1513**	**0.0381**
SEFFNER	**HILLSBOROUGH**	**SEFFNER**	**80-81**	**111**	**0.5080**	**0.3659**	**0.0018**

SEFFNER	HILLSBOROUGH	SEFFNER	82-83	111	0.4126	0.3810	0.0647
SEFFNER	HILLSBOROUGH	SEFFNER	84-92	1142	0.2227	0.1096	0.0709
TAMPA (62ND STREET...)	HILLSBOROUGH	TAMPA	71-82	244	0.5039	0.4806	0.0000
TAMPA (62ND STREET...)	HILLSBOROUGH	TAMPA	83	16	-2.1266	0.5197	0.9382
TAMPA (62ND STREET...)	HILLSBOROUGH	TAMPA	84-92	353	0.1886	0.0385	0.6899
TAMPA (62ND STREET...)	HILLSBOROUGH	TAMPA	93-96*	201	0.2620	0.6755	0.0011
TAMPA (HELENA...)	HILLSBOROUGH	TAMPA	71-81	1767	0.4089	0.0145	0.8385
TAMPA (HELENA...)	HILLSBOROUGH	TAMPA	82-91	2867	0.4718	-0.0422	0.4100
TAMPA (HELENA...)	HILLSBOROUGH	TAMPA	92	539	0.4829	-0.1037	0.4721
TAMPA (HELENA...)	HILLSBOROUGH	TAMPA	93-96	1975	0.5223	0.0549	0.3856
*TAMPA (KASSAUF...)	HILLSBOROUGH	TAMPA	71-80	790	0.3993	0.0777	0.2125
TAMPA (KASSAUF...)	***HILLSBOROUGH***	***TAMPA***	***81***	***51***	***0.3419***	***-0.6944***	***0.0065***
*TAMPA (KASSAUF...)	HILLSBOROUGH	TAMPA	82-83	115	0.1205	0.0964	0.5612
*TAMPA (KASSAUF...)	HILLSBOROUGH	TAMPA	84-92	919	0.1672	0.0849	0.1552
*TAMPA (KASSAUF...)	HILLSBOROUGH	TAMPA	93-96*	494	0.0774	0.1279	0.0826
TAMPA (PEAK OIL...)	HILLSBOROUGH	TAMPA	71-75	766	0.3467	-0.0218	0.7439
TAMPA (PEAK OIL...)	HILLSBOROUGH	TAMPA	76-83	1581	0.3758	0.0479	0.2096
TAMPA (PEAK OIL...)	**HILLSBOROUGH**	**TAMPA**	**84**	**301**	**0.3250**	**0.2910**	**0.0141**
TAMPA (PEAK OIL...)	HILLSBOROUGH	TAMPA	85-86	635	0.3014	0.1041	0.0852
TAMPA (PEAK OIL...)	***HILLSBOROUGH***	***TAMPA***	***87-96****	***4795***	***0.3850***	***-0.0522***	***0.0005***
TAMPA (REEVES...)	HILLSBOROUGH	IO	N/A	N/A	N/A	N/A	N/A
VALRICO	HILLSBOROUGH	VALRICO	71-84	272	0.5207	0.0021	0.9956
VALRICO	HILLSBOROUGH	VALRICO	85	32	0.8620	-0.2029	0.4440
VALRICO	HILLSBOROUGH	VALRICO	86-89	328	0.4122	0.0276	0.9266
VALRICO	***HILLSBOROUGH***	***VALRICO***	***90-92***	***263***	***0.4494***	***-0.5629***	***0.0257***
VALRICO	HILLSBOROUGH	VALRICO	93-96*	377	0.2973	-0.0174	0.9244
KENT (MIDWAY LANDFILL)	KING	KENT	77-80	131	0.5967	0.0639	0.1324
KENT (MIDWAY LANDFILL)	KING	KENT	81-84	95	0.7192	-0.0246	0.5916
KENT (MIDWAY LANDFILL)	KING	KENT	85	39	0.6805	0.0406	0.4364
KENT (MIDWAY LANDFILL)	**KING**	**KENT**	**86-96**	**741**	**0.6963**	**0.0374**	**0.0076**
***KENT (SEATTLE...)**	**KING**	**KENT**	**77-80**	**61**	**0.6668**	**0.0622**	**0.0420**
*KENT (SEATTLE...)	KING	KENT	81-87	127	0.4571	0.0344	0.2038
***KENT (SEATTLE...)**	**KING**	**KENT**	**88-90**	**93**	**0.6793**	**0.0905**	**0.0016**
*KENT (SEATTLE...)	KING	KENT	91-94*	227	0.6480	0.0231	0.1416
*KENT (SEATTLE...)	KING	KENT	95-96	45	0.6182	0.0102	0.7124
KENT (WESTERN...)	***KING***	***KENT***	***77-80***	***109***	***0.6523***	***-0.1461***	***0.0163***
KENT (WESTERN...)	KING	KENT	81-82	26	0.4887	-0.1059	0.3408
KENT (WESTERN...)	KING	KENT	83	31	0.4440	-0.0674	0.6569

KENT (WESTERN...)	KING	KENT	84*	44	0.5632	-0.1445	0.3534
KENT (WESTERN...)	***KING***	***KENT***	***85-96***	***1291***	***0.7095***	***-0.2219***	***0.0000***
*MAPLE VALLEY	KING	ISSAQUAH	77-79	61	0.6421	0.0944	0.3716
*MAPLE VALLEY	KING	ISSAQUAH	80-83	54	0.6066	0.1311	0.5842
****MAPLE VALLEY***	***KING***	***ISSAQUAH***	***84***	***18***	***0.8430***	***-1.4460***	***0.0000***
*MAPLE VALLEY	KING	ISSAQUAH	85-96	511	0.5695	0.0375	0.4765
RENTON	KING	RENTON	77-80	473	0.5855	0.0575	0.1352
RENTON	KING	RENTON	81-87	944	0.5936	-0.0019	0.8936
RENTON	KING	RENTON	88-89	533	0.5385	0.0049	0.8040
RENTON	KING	RENTON	90-96	2262	0.6361	-0.0069	0.3734
SEATTLE (HARBOR...)	KING	SEATTLE	77-79	225	0.3676	-0.1082	0.2028
SEATTLE (HARBOR...)	KING	SEATTLE	80-82	134	0.4165	-0.0475	0.6820
SEATTLE (HARBOR...)	KING	SEATTLE	83	61	0.6938	0.1558	0.2044
SEATTLE (HARBOR...)	**KING**	**SEATTLE**	**84-96**	**2215**	**0.5218**	**0.1270**	**0.0000**
SEATTLE (PAC-SOUND RES.)	KING	SEATTLE	77-78	144	0.4964	-0.0459	0.3400
SEATTLE (PAC-SOUND RES.)	***KING***	***SEATTLE***	***79-92***	***2287***	***0.6491***	***-0.0553***	***0.0000***
SEATTLE (PAC-SOUND RES.)	***KING***	***SEATTLE***	***93-94***	***746***	***0.3469***	***-0.0784***	***0.0001***
SEATTLE (PAC-SOUND RES.)	KING	SEATTLE	95-96	453	0.3370	-0.0447	0.0635
*FRANKLIN	MILWAUKEE	MILWAUKEE	71-83	498	0.5675	0.0862	0.0596
*FRANKLIN	MILWAUKEE	MILWAUKEE	84	50	0.5926	-0.0268	0.5672
***FRANKLIN**	**MILWAUKEE**	**MILWAUKEE**	**85**	**54**	**0.6238**	**0.0874**	**0.0078**
*FRANKLIN	MILWAUKEE	MILWAUKEE	86-92	532	0.3835	0.0149	0.5122
*FRANKLIN	MILWAUKEE	MILWAUKEE	93-95	233	0.5852	-0.0112	0.6323
MILWAUKEE	MILWAUKEE	MILWAUKEE	71-80	354	0.7128	-0.1275	0.1234
MILWAUKEE	MILWAUKEE	MILWAUKEE	81-83	60	0.6721	-0.2958	0.0831
MILWAUKEE	MILWAUKEE	MILWAUKEE	84	36	0.8375	0.0522	0.8055
MILWAUKEE	***MILWAUKEE***	***MILWAUKEE***	***85-95***	***759***	***0.3609***	***-0.0648***	***0.0000***
TARPON SPRINGS	PINELLAS	IO	N/A	N/A	N/A	N/A	N/A
*MATHER A.F.B.	SACRAMENTO	SACRAMENTO	76-81	144	0.1836	-0.0301	0.7654
*MATHER A.F.B.	SACRAMENTO	SACRAMENTO	82-84	186	0.0747	0.2565	0.1498
*MATHER A.F.B.	SACRAMENTO	SACRAMENTO	85-87	433	0.1190	0.1041	0.1240
***MATHER A.F.B.**	**SACRAMENTO**	**SACRAMENTO**	**88-93**	**1017**	**0.4090**	**0.1919**	**0.0000**
***MATHER A.F.B.**	**SACRAMENTO**	**SACRAMENTO**	**94-96**	**421**	**0.6075**	**0.1952**	**0.0000**
MCCLELLAN A.F.B.	**SACRAMENTO**	**SACRAMENTO**	**76-79**	**91**	**0.5687**	**0.4450**	**0.0005**
MCCLELLAN A.F.B.	**SACRAMENTO**	**SACRAMENTO**	**80-84**	**385**	**0.2852**	**0.3184**	**0.0270**
MCCLELLAN A.F.B.	SACRAMENTO	SACRAMENTO	85-87	537	0.3557	0.0011	0.9926
MCCLELLAN A.F.B.	**SACRAMENTO**	**SACRAMENTO**	**88-93**	**1732**	**0.4840**	**0.1868**	**0.0001**
MCCLELLAN A.F.B.	SACRAMENTO	SACRAMENTO	94-96	612	0.4958	0.1209	0.1194

RANCHO CORDOVA	SACRAMENTO	IO	N/A	N/A	N/A	N/A	N/A
SACRAMENTO (ARMY DEPOT)	SACRAMENTO	SACRAMENTO	75-78	123	0.7539	0.0445	0.2895
SACRAMENTO (ARMY DEPOT)	**SACRAMENTO**	**SACRAMENTO**	**79-84**	**428**	**0.1392**	**0.1826**	**0.0139**
SACRAMENTO (ARMY DEPOT)	SACRAMENTO	SACRAMENTO	85-87	529	0.2470	0.0652	0.2629
SACRAMENTO (ARMY DEPOT)	SACRAMENTO	SACRAMENTO	88-90	1090	0.4078	0.0344	0.1528
SACRAMENTO (ARMY DEPOT)	**SACRAMENTO**	**SACRAMENTO**	**91-96**	**1428**	**0.5751**	**0.0961**	**0.0000**
SACRAMENTO (JIBBOOM...)	SACRAMENTO	SACRAMENTO	76-80	77	0.5145	-0.1403	0.6388
SACRAMENTO (JIBBOOM...)	SACRAMENTO	SACRAMENTO	81-82	50	0.4212	0.3101	0.3806
SACRAMENTO (JIBBOOM...)	SACRAMENTO	SACRAMENTO	83	53	0.4621	-0.6164	0.2599
SACRAMENTO (JIBBOOM...)	SACRAMENTO	SACRAMENTO	84	73	0.5163	0.0297	0.9272
SACRAMENTO (JIBBOOM...)	SACRAMENTO	SACRAMENTO	85-87*	369	0.4159	0.1870	0.2526
SACRAMENTO (JIBBOOM...)	SACRAMENTO	SACRAMENTO	88-96	1576	0.5633	0.0042	0.9446
CAMP PENDLETON	SAN DIEGO	(NO DATA)	N/A	N/A	N/A	N/A	N/A
ALVISO	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
CUPERTINO	SANTA CLARA	SAN JOSE	73-85	577	0.8399	-0.0372	0.5254
CUPERTINO	SANTA CLARA	SAN JOSE	86-87	233	0.1411	-0.0711	0.7222
CUPERTINO	SANTA CLARA	SAN JOSE	88-90	397	0.3773	0.0775	0.3662
CUPERTINO	SANTA CLARA	SAN JOSE	91-92*	369	0.2333	-0.0650	0.5079
CUPERTINO	SANTA CLARA	SAN JOSE	93-96	671	0.6228	0.0443	0.1476
MT. VIEW (CTS PRINTEX...)	SANTA CLARA	PALO ALTO	71-86	95	0.9232	-0.0315	0.8433
MT. VIEW (CTS PRINTEX...)	SANTA CLARA	PALO ALTO	87	13*	N/A	N/A	N/A
MT. VIEW (CTS PRINTEX...)	SANTA CLARA	PALO ALTO	88-89	21	0.9375	0.0405	0.6786
MT. VIEW (CTS PRINTEX...)	**SANTA CLARA**	**PALO ALTO**	**90-91***	**35**	**0.7038**	**0.5778**	**0.0000**
MT. VIEW (CTS PRINTEX...)	**SANTA CLARA**	**PALO ALTO**	**92-96**	**88**	**0.7431**	**0.1928**	**0.0136**
MT. VIEW (FAIRCHILD...)	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
MT. VIEW (INTEL...)	SANTA CLARA	MOUNTAIN VIEW	73-80	68	0.9363	-0.1894	0.4735
MT. VIEW (INTEL...)	SANTA CLARA	MOUNTAIN VIEW	81-84	15*	N/A	N/A	N/A
MT. VIEW (INTEL...)	SANTA CLARA	MOUNTAIN VIEW	85	11*	N/A	N/A	N/A
MT. VIEW (INTEL...)	SANTA CLARA	MOUNTAIN VIEW	86-96	341	0.8077	0.1153	0.1038
MT. VIEW (JASCO...)	SANTA CLARA	LOS ALTOS	72-86	473	0.7771	-0.0008	0.9890
MT. VIEW (JASCO...)	SANTA CLARA	LOS ALTOS	87	82	0.7121	-0.0475	0.3890
MT. VIEW (JASCO...)	***SANTA CLARA***	***LOS ALTOS***	***88-89***	***150***	***0.5798***	***-0.0841***	***0.0468***
MT. VIEW (JASCO...)	SANTA CLARA	LOS ALTOS	90-96	785	0.5682	0.0418	0.0746
MT. VIEW (RAYTHEON...)	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
MT. VIEW (SPECTRA)	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
MT. VIEW (TELEDYNE)	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
PALO ALTO	SANTA CLARA	PALO ALTO	72-83	470	0.7387	-0.0845	0.0700
PALO ALTO	SANTA CLARA	PALO ALTO	84-87	380	0.2823	-0.0439	0.5848

PALO ALTO	**SANTA CLARA**	**PALO ALTO**	**88-89**	**242**	**0.4848**	**0.1428**	**0.0065**
PALO ALTO	SANTA CLARA	PALO ALTO	90-96	1324	0.6171	0.0119	0.5473
*SAN JOSE (FAIRCHILD...)	**_SANTA CLARA_**	**_SAN JOSE_**	**_72-79_**	**_667_**	**_0.8331_**	**_-0.0191_**	**_0.0215_**
*SAN JOSE (FAIRCHILD...)	SANTA CLARA	SAN JOSE	80-84	357	0.0799	0.0095	0.7627
*SAN JOSE (FAIRCHILD...)	SANTA CLARA	SAN JOSE	85-89	1415	0.3419	-0.0217	0.0867
*SAN JOSE (FAIRCHILD...)	**_SANTA CLARA_**	**_SAN JOSE_**	**_90-92*_**	**_1232_**	**_0.1061_**	**_-0.0527_**	**_0.0001_**
*SAN JOSE (FAIRCHILD...)	**_SANTA CLARA_**	**_SAN JOSE_**	**_93-96_**	**_1681_**	**_0.5967_**	**_-0.0186_**	**_0.0000_**
SAN JOSE (LORENTZ...)	**SANTA CLARA**	**SAN JOSE**	**72-80**	**1183**	**0.7844**	**0.0884**	**0.0002**
SAN JOSE (LORENTZ...)	SANTA CLARA	SAN JOSE	81-84	271	0.2473	0.1018	0.3863
SAN JOSE (LORENTZ...)	**SANTA CLARA**	**SAN JOSE**	**85-89**	**1712**	**0.3580**	**0.0924**	**0.0102**
SAN JOSE (LORENTZ...)	SANTA CLARA	SAN JOSE	90-91	1038	0.1879	0.0397	0.4300
SAN JOSE (LORENTZ...)	**SANTA CLARA**	**SAN JOSE**	**92-96**	**2966**	**0.3915**	**0.0789**	**0.0000**
***SANTA CLARA (INTEL CORP...)**	**SANTA CLARA**	**SANTA CLARA**	**72-80**	**172**	**0.8042**	**0.1118**	**0.0092**
*SANTA CLARA (INTEL CORP...)	SANTA CLARA	SANTA CLARA	81-84	50	0.2589	0.0878	0.6794
*SANTA CLARA (INTEL CORP...)	SANTA CLARA	SANTA CLARA	85	12*	N/A	N/A	N/A
*SANTA CLARA (INTEL CORP...)	SANTA CLARA	SANTA CLARA	86-90	226	0.3507	-0.0161	0.8686
*SANTA CLARA (INTEL CORP...)	SANTA CLARA	SANTA CLARA	91-92*	180	0.0851	0.1343	0.2421
*SANTA CLARA (INTEL CORP...)	SANTA CLARA	SANTA CLARA	93-96	320	0.2476	0.0376	0.3461
SANTA CLARA (INTEL MAG...)	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
SANTA CLARA (NATIONAL...)	**_SANTA CLARA_**	**_SUNNYVALE_**	**_73-80_**	**_91_**	**_0.9115_**	**_-0.1726_**	**_0.0322_**
SANTA CLARA (NATIONAL...)	SANTA CLARA	SUNNYVALE	81-84	15*	N/A	N/A	N/A
SANTA CLARA (NATIONAL...)	SANTA CLARA	SUNNYVALE	85-87	53	0.3914	-0.1091	0.5545
SANTA CLARA (NATIONAL...)	SANTA CLARA	SUNNYVALE	88-91	93	0.5393	0.0667	0.3393
SANTA CLARA (NATIONAL...)	SANTA CLARA	SUNNYVALE	92-96	162	0.7334	0.0458	0.3010
SANTA CLARA (SYNERTEK...)	**SANTA CLARA**	**SANTA CLARA**	**72-85**	**158**	**0.6524**	**0.3638**	**0.0298**
SANTA CLARA (SYNERTEK...)	SANTA CLARA	SANTA CLARA	86-87	58	0.0885	-0.3466	0.2834
SANTA CLARA (SYNERTEK...)	SANTA CLARA	SANTA CLARA	88-89	51	0.6342	0.0699	0.5913
SANTA CLARA (SYNERTEK...)	SANTA CLARA	SANTA CLARA	90-91*	60	-0.0793	0.2804	0.4426
SANTA CLARA (SYNERTEK...)	SANTA CLARA	SANTA CLARA	92-96	166	0.1037	0.1609	0.1865
SUNNYVALE (ADVANCED...)	SANTA CLARA	SUNNYVALE	72-84	141	0.9465	-0.0359	0.0816
SUNNYVALE (ADVANCED...)	SANTA CLARA	SUNNYVALE	85-87	76	0.0618	-0.0828	0.3193
SUNNYVALE (ADVANCED...)	SANTA CLARA	SUNNYVALE	88-90	99	-0.0039	-0.0552	0.7517
SUNNYVALE (ADVANCED...)	SANTA CLARA	SUNNYVALE	91*	44	-0.0291	0.1244	0.6323
SUNNYVALE (ADVANCED...)	SANTA CLARA	SUNNYVALE	92-96	255	0.0767	-0.0158	0.4644
SUNNYVALE (MONOLITHIC...)	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
SUNNYVALE (TRW...)	SANTA CLARA	IO	N/A	N/A	N/A	N/A	N/A
***SUNNYVALE (WESTING...)**	**SANTA CLARA**	**SUNNYVALE**	**72-80**	**377**	**0.8331**	**0.0590**	**0.0184**
*SUNNYVALE (WESTING...)	**_SANTA CLARA_**	**_SUNNYVALE_**	**_81-84_**	**_89_**	**_0.3802_**	**_-0.1772_**	**_0.0496_**

*SUNNYVALE (WESTING...)	SANTA CLARA	SUNNYVALE	85	48	0.8101	-0.0247	0.6011
***SUNNYVALE (WESTING...)**	**SANTA CLARA**	**SUNNYVALE**	**86-96**	**1601**	**0.6793**	**0.0995**	**0.0000**
BRIDGETON	ST. LOUIS	BRIDGETON	79	40	0.7549	-0.0797	0.6344
BRIDGETON	**ST. LOUIS**	**BRIDGETON**	**80-89**	**846**	**0.7571**	**0.1160**	**0.0000**
BRIDGETON	**ST. LOUIS**	**BRIDGETON**	**90**	**104**	**0.5904**	**0.6902**	**0.0000**
BRIDGETON	**ST. LOUIS**	**BRIDGETON**	**91-94**	**593**	**0.6801**	**0.3467**	**0.0000**
*ELLISVILLE	ST. LOUIS	BALLWIN	79-80	68	0.5151	0.0422	0.6432
****ELLISVILLE***	***ST. LOUIS***	***BALLWIN***	***81***	***44***	***0.7072***	***-0.1832***	***0.0003***
****ELLISVILLE***	***ST. LOUIS***	***BALLWIN***	***82-83***	***110***	***0.7090***	***-0.1288***	***0.0013***
****ELLISVILLE***	***ST. LOUIS***	***BALLWIN***	***84-86****	***282***	***0.6514***	***-0.1734***	***0.0000***
****ELLISVILLE***	***ST. LOUIS***	***BALLWIN***	***87-94***	***2555***	***0.6184***	***-0.1805***	***0.0000***
TIMES BEACH	**ST. LOUIS**	**EUREKA**	**79-81**	**41**	**0.8785**	**0.4294**	**0.0000**
TIMES BEACH	ST. LOUIS	EUREKA	82	9	0.9921	0.5130	0.3271
TIMES BEACH	ST. LOUIS	EUREKA	83	15	0.6762	0.0306	0.5747
TIMES BEACH	**ST. LOUIS**	**EUREKA**	**84-94**	**514**	**0.6137**	**0.2602**	**0.0000**
VALLEY PARK TCE	***ST. LOUIS***	***BALLWIN***	***79-84***	***487***	***0.5985***	***-0.1150***	***0.0055***
VALLEY PARK TCE	***ST. LOUIS***	***BALLWIN***	***85***	***128***	***0.6598***	***-0.1744***	***0.0084***
VALLEY PARK TCE	***ST. LOUIS***	***BALLWIN***	***86***	***144***	***0.5371***	***-0.2217***	***0.0136***
VALLEY PARK TCE	***ST. LOUIS***	***BALLWIN***	***87-94***	***2471***	***0.5192***	***-0.2741***	***0.0000***

BOLD TYPE denotes period where LNDIST is positive and significant.
ITALICIZED BOLD TYPE denotes period where LNDIST is negative and significant.
REGULAR TYPE denotes period where LNDIST is insignificant.

* on TIME denotes cleanup of site completed by end of period
* on SITE denotes model doesn’t include census data
* on N denotes model is biased due to insufficient observations
// Uses dffits = 2
// All OBS are < 3 miles from site

TABLE 4
Marginal Benefit of Increased Distance from NPL Site
(Applied to the 18 sites possessing positive/significant coefficients on LNDIST for the period following final listing)

County	Site	Mean of LNPRICE	Mean of Actual Price	Coefficient on LNDIST	Mean Distance From NPL Site
Broward	Hollingsworth*	11.2188	74518.29037	0.063825	1.477
Broward	Wingate	10.9672	57942.12145	0.077045	1.935
Broward	Pembroke Park	11.27213	78600.22822	0.048643	2.123
Broward	Chemform	10.81764	49893.19435	1.762094	1.914
Broward	Wilson	11.71793	122753.0481	0.238956	1.939
Dade	Hialeah B&B	11.47245	96033.26107	0.042167	1.838
Dade	Medley	11.36375	86141.78505	0.355623	2.347
Dade	Gold Coast*	11.23835	75989.45672	0.015581	1.645
Hamilton	Reading	11.15282	69760.26681	0.034725	2.064
Hills.	62nd Street…	10.4148	33349.5611	0.67551	1.259
King	Kent (Midway…)	11.59545	108602.5187	0.037355	1.038
King	Seattle (Harbor…)	11.42214	91321.3497	0.127036	2.402
Sacto.	Mather A.F.B.*	11.60094	109200.3862	0.191899	2.209
Sacto.	McClellan A.F.B.	11.51262	99969.44612	0.186841	2.484
Santa Clara	Mt. View (CTS…)	12.92274	409519.5264	0.577762	1.374
Santa Clara	Sunnyvale (West…)*	12.5094	270871.5139	0.099505	1.568
St. Louis	Bridgeton	11.48799	97537.27384	0.346747	2.149
St. Louis	Times Beach	11.35264	85190.04652	0.260202	1.824

*Lacks Census Vars.

All numbers are for the Post-Final Period

TABLE 5
Meta Analysis Variables and Descriptive Statistics

Name	Description	Means and Standard Deviations
FOURTH	=1 if estimated coefficient on LNDIST was positive and significant in period after NPL listing occurred	Mean = .327; STD = .474
SIZE	Size of site (in acres)	Mean = 269.5; STD = 906.8
MANU	=1 if site is a manufacturing site	Mean = .473; STD = .504
LANDFILL	=1 if site is a landfill	Mean = .200; STD = .404
WASTE	=1 if site is refiner/processor of waste products	Mean = .236; STD = .429
OTHER	=1 if site is other (military)	Mean = .091; STD = .290
NUMOBS	Number of observations in hedonic regression	Mean = 856.6; STD = 814.3
ADJR2	Adjusted R^2 from hedonic regression	Mean = .4930; STD = .2056
MEDDIST	Median distance from site in hedonic regression	Mean = 1.896; STD = .498
WESTC	=1 if site is in California or Washington	Mean = .436; STD = .501
FLORIDA	=1 if site is in Florida	Mean = .418; STD = .498
OTHERLOC	=1 if site is not on West Coast or in Florida	Mean = .146; STD = .356
CENSUS	=1 if hedonic regression included census tract level variables	Mean = .782; STD = .417
VACANCY	Average vacancy rate of county from 1971-1996 according to EPA data set	Mean = 5.36; STD = 2.42
BLUECOL	Percent of blue-collar residents in county from 1971-1996 according to EPA data set	Mean = 35.66; STD = 3.66
PRIOREQ3	=1 if coefficient on LNDIST was positive and significant in any of the first three periods	Mean = .509; STD = .505

TABLE 6
Results from Meta Analysis

Dependent Variable: FOURTH
Method: ML - Binary Probit
Date: 08/13/03 Time: 15:59
Sample: 3 57
Included observations: 55
Convergence achieved after 8 iterations
Covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	5.953490	6.227215	0.956044	0.3391
SIZE	0.001183	0.000804	1.471819	0.1411
MANU	1.845044	1.888272	0.977108	0.3285
LANDFILL	0.894333	1.870207	0.478200	0.6325
WASTE	1.297032	1.964100	0.660369	0.5090
NUMOBS	0.000518	0.000276	1.878694	0.0603
ADJR2	2.853127	1.660904	1.717815	0.0858
MEDDIST	-0.414453	0.545832	-0.759305	0.4477
WESTC	-0.413673	0.831425	-0.497547	0.6188
FLORIDA	1.212415	1.802277	0.672713	0.5011
CENSUS	0.568296	0.728411	0.780186	0.4353
VACANCY	0.223208	0.207156	1.077489	0.2813
BLUECOL	-0.337534	0.207032	-1.630345	0.1030
PRIOREQ3	1.263853	0.566360	2.231534	0.0256

Mean dependent var	0.327273	S.D. dependent var	0.473542
S.E. of regression	0.412778	Akaike info criterion	1.264067
Sum squared resid	6.985798	Schwarz criterion	1.775025
Log likelihood	-20.76185	Hannan-Quinn criter.	1.461659
Restr. log likelihood	-34.77267	Avg. log likelihood	-0.377488
LR statistic (13 df)	28.02165	McFadden R-squared	0.402926
Probability(LR stat)	0.008987		

Obs with Dep=0	37	Total obs	55
Obs with Dep=1	18		