Targeted Economic Development Programs in Florida: A Quasi-Experimental Analysis

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Abstract

We investigate the implementation of two of the most common targeted economic development programs at the state level, Community Redevelopment Areas (CRAs) and Enterprise Zones (EZs). Our focus is on the implementation of programs in Florida. Florida was the first state to enact enterprise zone legislation and has been viewed as a front-runner in development policy by other southern states. Furthermore, Florida offers the unique opportunity to compare cities that received program designation with cities that qualified for, but did not receive designation. We build on previous research by using a local level of analysis in a quasi-experimental framework. In addition, we identify differences in program implementation and designation status for small cities compared with larger cities. Consistent with previous research, we do not find evidence suggesting that targeted development programs had a significant impact on the targeted areas.

I. Introduction

Economic development programs that target distressed communities have become increasingly common policy tools over the past decade. Two of the most common programs at the state level include Community Redevelopment Areas (CRAs) and Enterprise Zones (EZs). These two programs target assistance to businesses located in distressed areas. The CRA and EZ programs offer an alternative to direct redistribution to individuals in distressed areas. The concept is to promote business growth, which in turn generates benefits for residents in terms of job opportunities and future tax revenues.

Targeted development programs are politically viable, particularly in southern states because they do not entail a direct tax loss. The real cost of these programs to residents includes the value of the foregone tax revenue, as well as the opportunity cost of not investing in other initiatives. However, it is unclear whether these programs do offer a viable alternative to traditional redistributive policies. The general conclusions about the effectiveness of such programs at the aggregate state and local levels are mixed. Bartik's 1991 assessment of several different types of state and local initiatives found little evidence for localized benefits, but found some evidence for aggregate effects at higher levels of analysis. In 1997, Blank drew similar conclusions about the efficacy of enterprise zones, in particular, based on her evaluation of studies to date. She concludes, "All of this suggests that economic development strategies for poor neighborhoods that are primarily focused around lower tax rates or tax rebates are unlikely to have large effects, and may be quite expensive [in terms of costs of foregone revenues per job created]" (Blank, 1991, p. 188). Mossberger (2000) reviewed an extensive number of studies of state enterprise zone programs with few examples of successful efforts.

One of the difficulties cited in drawing conclusions about the general effectiveness of targeted development is the inability to control for counterfactual effects (Mossberger, 2000). Even when there was evidence of some improvement within targeted areas, the question of whether such areas may have been predisposed to success could not be answered. Despite the apparent lack of conclusive supportive research, state and local policymakers continue to pursue such policies.

We investigate the implementation process and effectiveness of targeted economic development programs in Florida. Florida was the first state to enact enterprise zone legislation and has been viewed as a front-runner in development policy by other southern states (State of Florida Office of the Auditor General, 1993). Consequently, a better understanding of the efficacy of these types of programs in Florida is important for policymakers throughout the entire region. We build on previous research by using a local level of analysis in a quasi-experimental framework.

Recent research has questioned the appropriateness of using aggregate levels of analysis to investigate sub-state, geographically targeted programs (Tao and Feiock, 1999; Engberg and Greenbaum, 1999). These studies apply traditional econometric techniques using levels consistent with the scope of the programs. Both studies suggest that an appropriate unit of analysis is key to determining whether targeted

programs are having the desired impact that policymakers seek. We build on these studies by using a local level of analysis—the areas designated as distressed by the Florida Department of Community Affairs (FDCA) (FDCA, 1983). In so doing, we also address factors omitted by such studies by using a sampling frame that controls for economic disparity across local jurisdictions.

Our analysis also addresses concerns about the endogeneity of the program implementation with typical outcome measures used to evaluate the effectiveness of targeted development programs. Controlling for endogeneity is particularly important for analysis of targeted economic development problems. Only certain distressed communities qualify for such programs and only a subset of this group actually adopts them. Consequently, including non-distressed communities in the analysis biases results given that distressed communities may fare worse on average than non-distressed communities even if targeted programs were effective. This particular problem is often cited in the literature as a reason for the lack of significant findings in evaluations of the impact of targeted development programs on local economic conditions (USGAO, 1988; Jones, 1990; Papke and Papke, 1990; James, 1991; Erickson and Friedman, 1989; Boarnet and Bogart, 1997; McDonald, 1997). An advantage of focusing on the Florida experience is that Florida is one of the few states that has identified all of the distressed areas within its borders prior to implementing the programs. Consequently, it offers a unique opportunity to control for endogeneity concerns by comparing areas that adopted programs with areas of similar socioeconomic characteristics that did not adopt the programs.

This study is organized as follows: The next section provides a brief overview of EZ and CRA programs and summarizes the empirical literature on the efficacy of such programs. Section III discusses program design and implementation in Florida. It describes the distribution of distressed areas qualifying for the EZ and CRA programs, as well as the areas that actually implement the targeted programs. In Section IV, quasi-experimental and cross-section regression analyses are employed to evaluate the effectiveness of the programs using an area level of analysis. The final section summarizes the results and offers implications for future research.

II. Background on Targeted Development Programs and Summary of Literature

EZs and CRAs are two examples of a growing number of economic development instruments or "tools" that local governments use to generate growth within areas identified as economically disadvantaged. Targeted development tools attempt to funnel resources from outside a local government's jurisdiction toward areas within the jurisdiction that are lagging behind. These targeted tools differ from both non-targeted development tools and targeted tools that are not directed to need because they shun the "raise all boats" prescriptions for decline within local government jurisdictions. Instead, these programs target the poor, either geographically or economically. While policy design theory highlights the importance of matching specific means to ends (Blakely, 1989; Weiwel, Teitz and Giloth, 1993), there is often little attempt on the part of local governments to match a specific policy tool to specific outcomes based upon the underlying theoretical assumptions that such tools carry. Thus, local governments often implement several different types of development policy tools at once (Tao, 2000).

If, in fact, local governments use development policy instruments indiscriminately and do not distinguish between their chosen means to solve development problems, then the lack of documentation of clear policy impacts in the latter should not come as a surprise. However, there is evidence to suggest that some governments do pursue policy design with an eye towards both the means and the outcome (Rubin, 1989; Pagano and Bowman, 1995; Tao and Feiock, 1999; Tao, 2000), and that these governments can offer examples of at least partial success. In the case of Florida, EZs and CRAs offer a unique opportunity to examine two separate approaches toward targeted development while simultaneously controlling for pre-existing socioeconomic disparities.

Community Redevelopment Areas

As an outgrowth of the 1969 Community Redevelopment Act (Chapter 163, *Florida Statutes*), redevelopment areas represent a traditional "invest and grow" approach toward economic development. CRAs are defined as

geographically bounded areas that fall within the jurisdiction of either a city or county government. The strategy underlying redevelopment areas is fairly simple. A local governing body (city or county commission) may pass an ordinance establishing a "redevelopment area," after which they must create a redevelopment plan. The plan outlines the way in which the local government intends to improve infrastructure in the area, thus boosting private sector investment. CRAs are formed on the assumption that private investment will only take hold when local market conditions are stabilized through government intervention.

The statutes maintain that redevelopment areas should be focused on areas identified as "blighted". However, the local governing board has a great deal of leeway in determining which areas may be so designated. The main advantage of going to the trouble of writing a redevelopment plan lies in the state granting permission for the local government to implement tax-increment financing. Much like the old industrial revenue bonds, raising funds through local taxes is not necessary. Tax increment financing allows local governments to issue bonds using the redevelopment trust fund as collateral.

Enterprise Zones

The Florida EZ program, first initiated by the state legislature in 1980, represents an economic development policy initiative based on the assumption that localities are best served when private sector actors are offered incentives to invest in neighborhoods that have fallen into decline. The program allows local governments the opportunity to apply for state tax relief in the following areas: sales tax on purchases of renovation materials; corporate income tax; sales tax on business property purchased within a zone; sales tax exemption on electrical power provided by a municipally owned utility; and a variety of sales tax credits for businesses who hire zone residents. To a certain extent, this approach hands the job of policy implementation over to private firms, since it is their involvement which will predict the program's success or failure. The policy also assumes that employment of those on public assistance is something best leveraged at the state, rather than local, level. It is in this sense, perhaps, that the EZ program differs from more traditional forms of economic development because it specifically targets employment rather than job creation as a program goal.

Program Differences

While both programs require state sanction and local initiative, there are differences in the extent of local involvement in the implementation of the programs. The intent for establishing a redevelopment area is more redistributive in nature compared with EZ programs. CRAs seek to target the expenditure of local revenues within economically depressed areas of a city. EZs seek to provide business investment within economically depressed areas of a city through tax incentives, with employment incentives offered through tax expenditure at the state level. Thus, while redevelopment areas allow local governments to augment budgets through an expanded ability to issue bonds, there is still an expectation that expenditures from the local budget will be focused on the area in question. Small local governments may have a more limited ability to redirect spending as compared with larger city governments. In contrast, there is no such expenditure involved at the local level with an enterprise zone.

III. Overview of EZ and CRA Programs in Florida

Florida has been argued to be a policy leader in the southeast, often passing legislation that anticipates changes in political and economic patterns. In 1977, the Florida legislature amended the 1969 Community Redevelopment Act (Florida Statutes, 1980, Ch. 163) so that local governments could take advantage of tax-increment financing within CRAs. However, the constitutionality of this measure was challenged in 1979, and no CRAs were able to take advantage of the change in statute until the matter was resolved by the state's Supreme Court in 1980 (The Florida Senate, Committee on Economic, Community and Consumer Affairs, 1981), and redevelopment agencies were allowed to go forward with tax-increment financing of redevelopment trust funds. In 1980, the Florida legislature also created the nation's first state-sponsored enterprise zone program. In anticipation of the creation of a federally sponsored initiative under the newly elected Reagan administration, the legislature authorized the FDCA to conduct a statewide study in order to identify all areas that "meet

minimum standards of physical, socioeconomic and fiscal distress" (The Florida Senate, Committee on Economic, Community and Consumer Affairs, 1981, p. 10). These measures are outlined as follows:

Physical Distress: At least 37% of the housing in the area built before 1940; at least 15 % of the housing in the area lacking some or all plumbing facilities; or at least 25 % of the structures in the area declared dilapidated by the local code enforcement agency.

Socioeconomic Distress: At least 34% of the households in the area with incomes below poverty level; per capita income in the area is less than $3,750 (50 % of the state average); or at least 10% of the families in the area receiving public assistance or public welfare income.

Fiscal Distress: Per capita taxable value of property in the area is less than $9,820; local taxes per capita are more than $46; or local fiscal effort ratio (a measure of tax effort in relation to the taxable base) for the area exceeds .015 (The Florida Senate, Committee on Economic, Community and Consumer Affairs 1981, p. 12).

By 1983 the FDCA had identified all areas within the state that qualified as "distressed" (State of Florida, 1983). Local governments of areas qualifying as distressed (qualifying areas) could choose whether or not to apply for CRAs or EZs. The local governments applying for the EZ program and the local redevelopment boards applying for CRA designation were required to have their applications approved by the FDCA before they could take advantage of the state-level tax options. (EN1) Not all applications were approved.

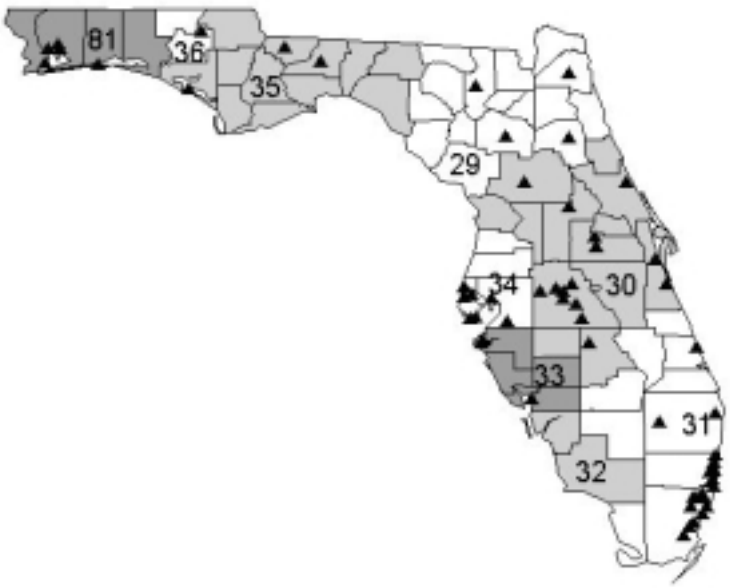
By classifying all distressed areas prior to implementing targeted development programs, the State of Florida offers a rare and unique opportunity to compare qualifying areas with areas that receive targeted development initiatives. It also allows for the investigation of the decision making process for cities submitting an application for targeted area designation.

Distribution of Qualifying Areas

The FDCA identified ninety-eight qualifying areas distributed throughout the state. The qualifying areas are spread across all regions, from the coastal areas to the central interior to the northern panhandle. Of the sixty-seven counties in the state, twenty-six had at least one qualifying area and thirteen had several. While geographically dispersed, the qualifying areas are concentrated in metropolitan counties with only four qualifying cities in nonmetropolitan counties.

Figure 1 shows the locations of the qualifying cities in relation to the Bureau of Economic Analysis (BEA) economic areas. The economic areas are generally larger than census metropolitan areas because they group metropolitan areas and economically linked suburban areas together. Like metropolitan area definitions, economic areas vary widely by size and may cross state borders. Only the Florida counties are shown in Figure 1 even though some of the economic areas extend across the Florida-Georgia border. Florida has nine economic areas. (EN2) All except the economic area along southwestern coast (including Collier and Lee Counties) had at least one qualifying area. Among the other economic areas, those with bigger cities such as Miami, Orlando, and St. Petersburg had more cities with qualifying areas.

FIGURE 1: Economic Areas and All Cities with Qualifying Areas in Florida



To further investigate the distribution of qualifying areas, we employ the 1989 rural-urban continuum (RU) codes developed by the United States Department of Agriculture (USDA). (EN3) The RU codes classify counties by degree of urbanization and nearness to metropolitan areas. Metropolitan status is determined by the Office of Management and Budget. Adjacency was determined by physical boundary adjacency and a finding that at least two percent of the employed labor force in the nonmetropolitan county commuted to metropolitan central counties. (EN4) Table 1 describes the RU classification codes and the distribution of Florida counties by category. Of the four nonmetropolitan counties with qualifying areas (qualifying counties), all were located in counties with urban populations of 2,500 to 20,000 that were adjacent to metropolitan areas (RU code 6). None were in nonadjacent or rural counties. Of the metropolitan counties with qualifying areas, the majority were medium-sized metropolitan counties (RU code 2) with an almost equal split between the large (six counties) and small (seven counties) metropolitan counties.

The USDA urban influence (UI) classification scheme also can be used to investigate the distribution of qualifying areas by type of county. This scheme classifies counties by degree of urbanization as well as size of the largest city in the county. Table 2 describes the classification scheme and the composition of counties for each category. With the UI codes the metropolitan counties are split into only two categories where small represents medium and small in the RU codes. This breakdown shows that the four nonmetropolitan counties with qualifying areas were all adjacent to small

metropolitan areas. Two have cities with over 10,000 residents and two don't.

Both RU and UI codes are useful for controlling for regional influences. The trade-off is that the RU codes distinguish between the metropolitan counties more and nonmetropolitan counties less. In this case, given that qualifying areas are mostly in metropolitan counties, the RU codes may be more appropriate for the analysis. Using the RU codes yields five categories of county-types versus only four when using the UI codes.

Description of Cities with Qualifying Areas

Thirty of the originally qualifying cities had populations in 1980 that were less than 20,000. We classify these as small cities. Tables 3 and 4 describe the small and larger qualifying cities respectively. A city could have multiple qualifying areas. Only one small city in the Greater Miami Metropolitan Area, Opa Locka, had two qualifying areas. The other small qualifying cities had a single qualifying area in each. In contrast, only six of the large qualifying cities had a single qualifying area. The largest four cities in the state each had three or more areas that qualified for the programs. Miami had the most with eleven followed by Jacksonville with six, Tampa with five, and St. Petersburg with three. Lakeland, with four areas, was the only other of the large cities to have more than two areas.

The boundaries of the ninety-eight qualifying areas do not strictly correspond with city, census place, or other political boundaries. However, the areas do correspond, for the most part, with block-level divisions. Targeted areas are based on census tracts and blocks. When the areas in question do not comprise complete tracts, the unit of analysis drops to the block level. The standard approach for GIS when dealing with census tract data is to assume that tracts themselves are internally uniform unless there is information available that may contradict this assumption. This was the approach used for any portion of a targeted area that comprised less than a census block. For the purposes of this study, portions of census areas are treated as proportional microcosms of the whole, and the portions that were included were calculated as percentages of the whole based on the relative geographic region covered by a targeted area. For example, if a city had three census tracts designated as a targeted area, but only sixty-five percent of the third tract was included, the level of analysis dropped to the block group level, where inclusion was based on figures for block groups. For areas that were not designated as either redevelopment areas or enterprise zones, the 1980 configurations were used again in 1990. For areas that were so designated, the 1990 configurations were used as the basis for comparison to 1980 figures.

For the majority of the areas in smaller cities, the boundaries correspond to city borders. To see this, compare the area population with the city population in Table 5. The areas were smaller than their primary city in only seven cases (Auburndale, Cocoa, Dania-Liberia, Goulds, Opa Locka Area, Perrine, Washington Park-North Miami). Two of the areas, Opa Locka (EZ) and Sweetwater, encompassed land areas that extended well outside the city political jurisdiction. In contrast, the area boundaries were generally smaller than the city boundaries for the larger cities.

Designated Areas

Not all qualified areas were eventually designated as EZs or CRAs. Of the fifty-nine qualifying cities, thirty-three received at least one area designation. The last 3 columns of Tables 3 and 4 identify the designation status of the qualifying areas for each small and large qualifying city, respectively. Figures 2 and 3 show the designation status for all of the qualifying cities in small and large cities, respectively. The qualifying areas are dispersed throughout the state for both groups of cities. For the most part, the geographic distributions of the small and large cities with qualifying and designated areas are similar.

FIGURE 2: Small Cities with Qualifying and Designated Areas

✙ indicates city has at least one area receiving program designation (N=9)
▲ indicates city with qualifying area but no designated area (N=22)

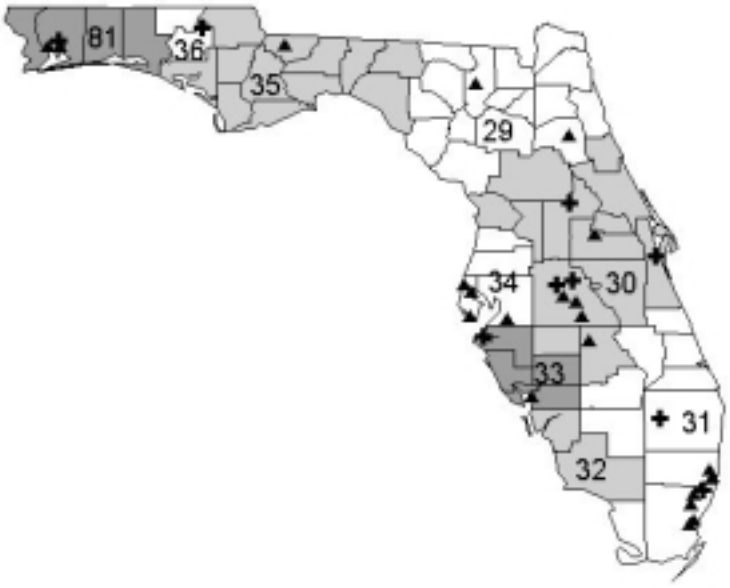


FIGURE 3: Large Cities with Qualifying and Designated Areas

✙ indicates city has at least one area receiving program designation (N=9)
▲ indicates city with qualifying area but no designated area (N=22)

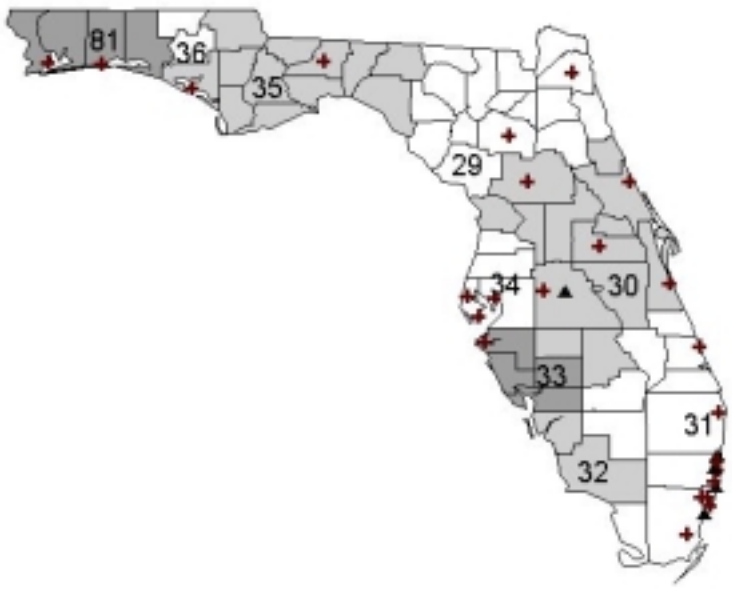


Table 7 summarizes the designation outcomes for the qualifying cities broken down by city size. Only nine of the thirty small qualifying cities received an area designation. Only one small city had more than one area designated. In contrast, twenty-four of the twenty-nine large qualifying cities had one or more areas designated. Slightly more than half of the large qualifying cities had multiple areas designated. While Miami had seven qualifying areas designated for a targeted development program, five of the original areas were combined to form one county-wide EZ, the North Dade County EZ. Of the remaining large qualifying cities, thirteen had one designated area, eight had two designated areas, and two had three designated areas.

In order for a qualifying area to be designated, the city government had to apply for designation and be approved by the FDCA. For small cities, all of the applications for designation were approved, but not all the cities applied for designation. Even the application for two areas in Opa Locka was approved. Table 8 shows that seven of the nine approved applications from small cities were for EZ programs and only two for CRAs. One city, Chipley applied for and received both designations for the same area. This suggests that the small cities found the EZ program to be more desirable.

For the large qualifying cities, only five cities did not receive any area designation. Given that many cities had multiple qualifying areas,

however, this amounted to only forty-two designated areas out of a possible sixty-seven. In contrast to the small cities, some of the applications from large cities were rejected. At this point, the data are not available to distinguish those areas whose applications were declined from those that did not submit an application. We also don't know whether large qualifying cities with multiple qualifying and designated areas place applications for the non-designated areas or not. We do know that for the large cities there was some state imposed rationing of the total number as well as type of program designation. As shown in Table 8, program designations were equally split between EZ and CRA designation. This is in sharp contrast to the case in the small qualifying cities where most cities applied for and received EZ designation.

There are many interesting questions that can be addressed by focusing on the programs in the large cities. For example, it would be very interesting to compare those cities that applied for programs and were rejected with those that received programs. This comparison would control for some of the possible self-selection in the application process at the city level. Cities might selectively decide for which qualifying areas, if any, to submit an application. If cities were more likely to submit applications for the areas that are in the worst condition, comparing these areas to other areas even within the same city would generate biased program impact estimates. However, a comparison of areas with and without designation but with submitted applications could overcome some of the self-selection bias on the part of the cities in the application process. Selection bias on the part of the program administrators, however, would remain. Unfortunately, to do a thorough analysis for large cities, we need the application information in order to determine who applied but was denied designation. Currently, this information is not available.

For small cities, there did not appear to be any rationing on the part of the program administrators since all applications were approved. This suggests that selection bias on the part of the program administrators was probably minimal. Thus receiving program designation was solely determined by the decision to complete an application. By modeling the city application decision we are able to investigate some important aspects of the targeted development programs. In particular, were the cities with the highest expected net benefits more likely to place applications? Can we identify any factors related to the application decision? Did those that received designations fare better after program implementation compared with similar cities that did not apply?

A Simple Model of the Small City Application Decision

The expected payoff from applying for a targeted development program can be specified as follows:

$$(1)\quad V_{it} = P_{it}*(B_{it} - C_{it}) - A_{it},$$

where P_{it} is the probability of city i receiving program t designation, B_{it} is the expected benefit of implementing the program, C_{it} is the cost of implementing the program, and A_i is the cost of completing the application. A city applies for program designation if the expected payoff is positive. It will apply for the program that has the highest expected payoff. If $V_{EZ}>V_{CRA}$, a city will choose to apply for EZ program designation.

Based on the Florida experience, we would infer that small cities have a higher expected payoff from the EZ programs compared with the CRA programs. This is consistent with the higher costs associated with implementing a CRA program compared with an EZ program, ($C_{EZ}<C_{CRA}$). EZ benefits to firms come mostly in the form of state tax expenditures (tax breaks) while CRAs require targeted investment on the part of the city in the designated area.

The application costs for the different programs are likely to be about the same for a given city ($A_{i,EZ} = A_{i,CRA}$). Application costs, however, may vary across cities depending on city specific features of government. For example larger city governments may have more manpower resources to devote to completing the application relative to a smaller city government. Table 10 shows that the cities submitting applications were larger on average than those that didn't. The difference, however, is not statistically significant. In addition, different types of government may be more amenable to following through on an application. For instance, Tao and Feiock (1999) find that district representation is more important in the adoption of EZs than for CRAs. Table 9 describes the breakdown of city government

types for qualifying cities. A greater percentage of the qualifying cities that completed applications had district-level representation compared with the cities that did not complete applications. Also, none of the cities submitting applications had a strong mayor-type of government.

Unless the benefits of implementing a CRA are sufficiently high to offset the higher implementation costs, we would expect small cities to select EZs over CRAs in the application procedure. Except for Auburndale, which applied for a CRA, and Chipley, which applied for both EZ and CRA for the same area, the small qualifying cities primarily applied for EZ programs.

The expected benefits of the programs may be greater for cities in relatively worse economic conditions. Indeed, Table 9 shows that cities submitting applications had lower median incomes, lower median property values, and higher unemployment levels compared with the qualifying cities that did not submit applications. Only the difference in the mean unemployment rates was statistically significant. This suggests that even without state imposed rationing among the targeted areas in small cities, the relatively worse-off small cities targeted themselves for program designation.

This finding of self-selection for smaller cities is particularly significant in view of the current literature on targeted development. The application process is overlooked in most studies of impact of targeted program adoption (Mossberger, 2000; Blank, 1997). It would seem, therefore, that small cities finding themselves in worse than average economic straits are more likely to adopt EZs, suggesting perhaps that this type of instrument is chosen over CRAs because of the perceived lower cost of implementation.

IV. Quasi-experimental Analysis of Area-Level Impacts

Recent research has argued that the evaluation of targeted development programs requires analysis at the area level (Tao and Feiock, 1999; Engberg and Greenbaum, 1999). While citywide effects are desirable, even a large impact at the area level may not be evident when doing a city level of analysis. Our focus will be on whether the targeted programs had discernable impacts on the targeted areas. To address this question, we use quasi-experimental analysis using data for qualifying areas in small cities.

The idea of a quasi-experiment is to simulate a laboratory experiment *ex post*. The distinguishing feature of the procedure is the comparison of "treatment" groups with "control" groups. The control group serves as the counterfactual for what would have happened to the treatment group in the absence of the treatment. It provides a baseline forecast. The treatments and controls can be matched in many ways: one treatment to one control (twins); one treatment to many controls (one-to-many); or many controls to many treatments (many-to-many). The impact is measured as the difference in outcome measures between the treatments and the controls in the post-treatment period. Any divergence in outcome measures in the post-treatment period is attributed to the treatment impact. In most studies several matching schemes and outcome measures are evaluated to check for the sensitivity of the results to the matching scheme. (EN5)

In our study, we employ a log change specification as the relative measure of change in the outcome measures,

$$(2)\ Y = \log (Y_{1990}/Y_{1980}).$$

The log change specification offers the benefits of being a symmetric and uniform measure of relative change. (EN7) The change specification controls for the baseline differences in the levels of the variables. Estimated program impacts are measured as the divergence in the log changes between the treatments and the controls. The outcome measures analyzed include population, median property values, median household income, and the unemployed-to-population ratio. (EN6)

In our study of small cities, there are only nine areas that receive program designation (treatments) and twenty-two areas that are qualified but do not receive designation (potential controls). We evaluate the efficacy of the targeted development program by comparing how treatments performed on average compared with the controls (the many-to-many approach) using several grouping schemes. The impact of the targeted program is estimated by taking the average of the log changes for the treatment group (Y_T) minus the average of the log changes for the control group (Y_C), where Y is the log

change in the outcome variable as specified in Equation (2).

Testing for Significance

Several approaches can be used in a quasi-experimental framework to evaluate the significance of estimated impacts. For example, the impact can be computed using a difference of population means tests assuming normality and independence variances across the groups. Table 11 shows the pre- and post-program means for the qualifying areas by designation status. Consistent with the city-level analysis, on average, the designated areas had slightly higher population, higher unemployed-to-population ratio, lower median property values and lower median household incomes compared with the non-designated areas in 1980. Only the mean differences in the unemployment-to-population ratios were statistically significant. In 1990, the gaps between the designated areas and the non-designated areas had lessened in regard to all of the measures examined. Just looking at the before and after comparisons, it would be tempting to infer that the programs had positive impacts on the designated areas. However, none of the mean differences in the log changes were found to be statistically significant. Consequently, we cannot conclude based on these estimates that the programs had a positive impact.

We can also estimate the impact using an ordinary least squares (OLS) estimation for all the areas (i) as,

$$(2)\ Y_i = constant + BT_i + e,\ e \sim N(0,\sigma^2),$$

where T is a dummy for the treatments and B estimates the treatment impact. This is essentially a matched-sample regression. In contrast to the difference in means test, the OLS estimates assume that the treatments and controls come from the same distribution. While the estimated impact (the difference in the log change) will be the same, the standard errors may differ and thereby affect significance tests. For example, Table 12 compares the impact estimates (differences in the log changes) and standard errors using the difference in means tests and the OLS estimates. The standard errors using OLS regression are all larger than using the difference in population means specification. While this causes the test statistics to be larger, all of the estimated coefficients for the outcome measures remain statistically insignificant.

Alternative Matching

To see if the results are sensitive to the matching scheme, we investigate various matching schemes. An obvious matching scheme is to compare qualifying areas within the same economic areas and estimate the impacts separately for each economic area. Given the small number of cases, economic areas 33 and 34 were combined, as were economic areas 29, 35, 36 and 81. Except for the coefficient on log change in population, none of the log change coefficient estimates on the outcome measures were statistically significant. Table 13 reports only the significant coefficient estimates from the separate regional analyses.

An alternative to using separate regional analyses is to group the treatments and controls according to the RU codes for county-types. Not all county-types had both control and treatments. Accordingly, we used four groupings for the analysis: RU = {0,1}, RU = 2, RU = 3, and RU = 6. Again, we estimated the treatment impacts as the difference in log changes for the treatments and the controls for each group separately for all of the outcome measures. Table 14 indicates the coefficient estimates which were significant.

Rather than estimate the impacts separately for different groups, we add explanatory variables to Equation (2). The cross-section regression model is,

$$(3)\ Y_i = constant + BT_i + \Gamma X_i + e,\ e \sim N(0,\sigma^2),$$

where X is a vector of explanatory variables for area i. We considered various possible explanatory variables, including strong mayor-type of management, district-level elections, economic area dummies, RU county-type dummies, and the 1980 values of the outcome measure being estimated (lagged explanatory variables). Equation (3) was also estimated separately for the regional and county type groupings as explained above. For the sake of brevity, we do not provide the results of the estimates. They can be summarized briefly. The estimates using the OLS regression on the matched samples were consistent with the results from above. Except for a few scattered

significant coefficients, the estimated impacts were not found to be statistically significant.

Summary of Empirical Analysis

While our results are consistent, caution is warranted in concluding the programs did not improve the outcome measures in the designated areas. A major obstacle to our analysis is the small number of observations. While we investigated the entire population of areas in small cities, this yielded at most 31 areas. Using the group matching techniques reduced the statistical power of our hypothesis test even further. Assumptions of normality may also be inappropriate and lead to misleading estimates. A larger population of observations would allow for the application of nonparametric tests that do not rely on assumptions about underlying distributions.

Another valid concern is how well the controls represent the counterfactual for the designated areas. We suspect that much of the potential endogeneity in the selection procedure was accounted for by using only distressed areas as designated by the FDCA. Self-selection among the small cities that submitted applications (and therefore implemented programs) still may be evident. While the designated areas and cities were in relatively worse condition on average in the pre-program period, these differences were only statistically significant for unemployment. Consequently, the quasi-experimental and match-sample regression approaches are appropriate for analyzing impacts of targeted development programs.

V. Conclusion

Our analysis uses the population of distressed areas in small cities in Florida. We find little or no evidence that the areas receiving the targeted programs were helped by the implementation of the programs. The results are consistent across various matching schemes and estimation techniques. The results confirm the findings of previous studies as to the efficacy of targeted development instrument adoption. Caution should be used when drawing more generalized conclusions about the merit of such programs. Due to the small sample size and the reduced significance levels, our findings are somewhat limited in their application to broader venues.

Analysis of the Florida experience with targeted development programs highlights important aspects of such programs. The Florida experience offers a unique opportunity to investigate the take-up or the application decision for small cities and to a lesser extent for larger cities. For the small cities, selection for program designation was on the side of the local government initiative to complete the application procedure. All applicants from small cities were accepted. In a sense, the small city local government targeted themselves for the targeted programs, and in particular demonstrated a strong preference for the EZ programs over the CRA programs. This self-selection process on the part of small city governments is consistent with the intentions of the programs (to target distressed areas) as well as the desirable outcome of giving preference to areas that are likely to benefit the most from the programs (the areas that chose to participate).

The application decision process for the larger cities is equally interesting but more difficult to pin down. The total number and types of programs were rationed at least to some extent by the FDCA. At this point we cannot distinguish the larger cities that had applications declined from those that did not submit applications. In addition, the large cities had multiple areas so the application process involved not only whether or not to apply, but also for which areas and which programs. The ability to include the larger cities would also add credibility to the empirical tests by increasing the number of observations used in the analysis. Perhaps future studies can explore the nature of adoption in more detail, when more is known about the selection process for all qualified areas.

Endnotes

1. For the period covered in this study, the Enterprise Zone program was administered by the Florida Department of Community Affairs (FDCA). However, when the program was evaluated in 1994 just prior to sunset legislation, the Florida Legislature and the Office of the Governor moved the program to the Department of Commerce. When the Department of Commerce was privatized in 1995, the program was moved to the Office of the Governor. After the 1998 gubernatorial race and the installation of the new Bush administration, the program was once again returned to the FDCA.

2. See Table A1 for a list of all counties in Florida and their respective economic area, metropolitan, and urban influence classification.

3. The RU codes were developed by Calvin Beale and are sometimes referred to as the Beale codes. As shown in Table A1, eighteen Florida counties changed classification from 1983 to 1989. We use the 1989 classifications for this paper. Six of the qualifying counties changed classification from 1983 to 1989 (see Table 1).

4. Information about the classification can be found at http://usda.mannlib.cornell.edu/data-sets/rural/.

5. For details of the methodology see Reed and Rogers (2000).

6. Tornqvist et al. (1985) show that the log change measure is the only symmetric, additive, and normed indicator of relative change.

7. Unemployment rates were not available at the area level. We use unemployed to population ratio as a proxy. It would be informative to investigate welfare measures. However, at this time we don't have complete enough area-level data to perform a meaningful analysis.

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TABLE 1: Florida Counties by 1989 Rural-Urban Continuum (RU) Codes

Code	*Description*	*All Florida Counties*		*Qualifying Counties*		*Designated Counties*	
		N	*%*	*N*	*%*	*N*	*%*
Metropolitan County Codes							
0	Central counties of large metro areas of 1 million or more residents	8	11.94%	5	19.23%	5	23.81%
1	Fringe counties of large metro areas of 1 million or more residents	2	2.99%	1	3.85%	1	4.76%
2	Counties in metro areas of 250,000- 1 million residents (medium)	16	23.88%	9	34.62%	9	42.86%
3	Counties in metro areas of < 250,000 residents (small)	8	11.94%	7	26.92%	5	23.81%
Nonmetropolitan County Codes							
4	Urban population of 20,000 or more, adjacent to metro area	3	4.48%				
5	Urban population of 20,000 or more, nonadjacent to metro area	0	0.00%				
6	Urban population of 2,500-20,000, adjacent to metro area	15	22.39%	4	15.38%	1	4.76%
7	Urban population from 2,500-20,000, adjacent to metro area	5	7.46%				
8	Completely rural (no places of 2,500 or more), adjacent to metro area	7	10.45%				
9	Completely rural, not adjacent to metro area	3	4.48%				
	Total	67	100.00%	26		21	

TABLE 2: Florida Counties by Urban Influence (UI) Codes

Code	*Description*	*All Florida Counties* *N*	*%*	*Qualifying Counties* *N*	*%*	*Designated Counties* *N*	*%*
Metropolitan County Codes							
1	Counties in large metro areas of 1 million or more residents	10	14.93%	6	23.08%	6	28.57%
2	Counties in small metro areas of less than 1 million residents	24	35.82%	16	61.54%	14	66.67%
Nonmetropolitan County Codes							
	Adjacent to a large metro area and						
3	Contains all or part of its own city of 10,000 or more residents	1	1.49%				
4	Does not contain any part of a city of 10,000 or more residents	1	1.49%				
	Adjacent to a small metro area						
5	Contains all or part of its own city of 10,000 or more residents	3	4.48%	2	7.69%		
6	Does not contain any part of a city of 10,000 or more residents	20	29.85%	2	7.69%	1	4.76%
	Not adjacent to a small metro area and						
7	Contains all or part of its own city of 10,000 or more residents	0	0.00%				
8	Contains all or part of its own town of 2,500 to 9,999 residents	5	7.46%				
9	Totally rural, does not contain any part of a town of 2,500 residents	3	4.48%				
	Total	67	1	26		21	

TABLE 3: Small Cities with Qualifying Areas in Florida

City	*County*	*Population*		*Qualifying*	*Designated Areas*		
		1980	*1990*	*Areas*	*Total*	*EZs*	*CRAs*
Gretna	Gadsden	1,448	1,981	1	0	0	0
Wimauma	Hillsborough	1,477	2,968	1	0	0	0
Bagdad	Santa Rosa	1,479	1,416	1	0	0	0
Umatilla	Lake	1,872	2,388	1	1	1	0
Eatonville	Orange	2,185	2,192	1	0	0	0
Hialeah Gardens	Dade	2,700	7,713	1	0	0	0
Frostproof	Polk	2,995	2,840	1	0	0	0
Wahneta	Polk	3,329	4,024	1	0	0	0
Chipley	Washington	3,330	3,729	1	1*	1	1
South Bay	Palm Beach	3,886	3,461	1	1	1	0
Pace	Santa Rosa	5,006	6,318	1	0	0	0
Palm Harbor	Pinellas	5,215	11,709	1	0	0	0
Safety Harbor	Pinellas	6,461	15,124	1	0	0	0
Auburndale	Polk	6,501	8,858	1	1	0	1
Punta Gorda	Charlotte	6,797	10,878	1	0	0	0
Goulds	Dade	7,078	7,284	1	0	0	0
Milton	Santa Rosa	7,206	7,216	1	1	1	0
Washington Park	Dade	7,240	6,930	1	0	0	0
Sweetwater	Dade	8,251	13,909	1	0	0	0
Lake Wales	Polk	8,466	9,670	1	0	0	0
Palmetto	Manatee	8,637	9,268	1	1	1	0
Sebring	Highlands	8,736	8,900	1	0	0	0
Lake City	Columbia	9,257	9,927	1	0	0	0
Palatka	Putnam	10,175	10,201	1	0	0	0
Haines City	Polk	10,799	11,683	1	1	1	0
Gulfport	Pinellas	11,180	11,727	1	0	0	0
Dania	Broward	11,811	13,024	1	0	0	0
Opa Locka	Dade	14,460	15,283	2	1	1	0
Cocoa	Brevard	16,096	17,691	1	1	1	0
Perrine	Dade	16,129	15,576	1	0	0	0
Total				31	9	7	1

* Chipley's qualifying area was designated with both an EZ and a CRA.

TABLE 4: Large Cities with Qualifying Areas in Florida

City	*County*	*Population*		*Qualifying*	*Designated Areas*		
		1980	*1990*	*Areas*	*Total*	*EZs*	*CRAs*
Homestead	Dade	20,668	26,866	1	1	1	0
Fort Walton Beach	Okaloosa	20,829	21,468	1	1	0	1
Winter Haven	Polk	21,119	24,725	2	0	0	0
Oakland Park	Broward	23,035	26,326	1	0	0	0
Bradenton	Manatee	30,170	43,091	1	1	1	0
West Little River	Dade	32,492	33,575	1	1	1	0
Panama City	Bay	33,346	34,378	1	1	1	0
Fort Pierce	St. Lucie	33,802	36,830	2	2	1	1
Hallandale	Broward	36,517	30,996	1	0	0	0
Ocala	Marion	37,170	42,045	1	1	0	1
Deerfield Beach	Broward	39,193	46,325	1	0	0	0
Coral Gables	Dade	43,241	40,091	1	0	0	0
Melbourne	Brevard	46,536	59,646	2	1	0	1
Lakeland	Polk	47,406	70,576	4	1	0	1
Pompano Beach	Broward	52,618	72,411	2	1	0	1
Daytona Beach	Volusia	54,176	61,921	2	2	1	1
Pensacola	Escambia	57,619	58,165	2	1	0	1
West Palm Beach	Palm Beach	63,305	67,643	2	2	1	1
Gainesville	Alachua	81,371	84,770	2	2	1	1
Tallahassee	Leon	81,548	124,773	2	1	1	0
Clearwater	Pinellas	85,528	98,773	2	2	1	1
Hollywood	Broward	121,323	121,697	2	1	0	1
Orlando	Orange	128,291	164,693	2	2	1	1
Hialeah	Dade	145,254	188,004	2	2	1	1
Fort Lauderdale	Broward	153,276	149,377	2	2	1	1
St. Petersburg	Pinellas	238,647	238,629	3	1	1	0
Tampa	Hillsborough	271,523	280,015	5	3	1	2
Miami	Dade	346,865	358,548	11	7*	5*	2
Jacksonville	Duval	540,920	635,230	6	3	1	2
Total				67	42	21	21

*In Miami, five of the original qualifying areas were combined to form one EZ, the North Dade County EZ.

TABLE 5: Qualifying Areas in Small Cities

	Designation		*1990 Population*	
Area Name	***EZ***	***CRA***	***Area***	***City***
Auburndale CRA	0	1	2,514	6,501
Bagdad/East Milton	0	0	1,479	1,479
Chipley	1	1	3,330	3,330
Cocoa EZ	1	0	1,243	16,096
Dania-Liberia	0	0	3,052	11,811
Eatonville	0	0	2,185	2,185
Frostproof	0	0	2,995	2,995
Goulds EZ	0	0	4,936	7,078
Gretna	0	0	1,448	1,448
Gulfport	0	0	11,180	11,180
Haines City	1	0	10,799	10,799
Hialeah Gardens	0	0	2,700	2,700
Lake Wales	0	0	8,466	8,466
Lake City	0	0	9,257	9,257
Milton	1	0	7,206	7,206
Opa Locka Area	0	0	9,643	14,460
Opa Locka EZ	1	0	21,889	14,460
Pace	0	0	5,006	5,006
Palatka	0	0	10,175	10,175
Palm Harbor	0	0	5,215	5,215
Palmetto	1	0	8,637	8,637
Perrine Area	0	0	9,747	16,129
Punta Gorda	0	0	6,797	6,797
Safety Harbor	0	0	6,461	6,461
Sebring	0	0	8,736	8,736
South Bay	1	0	3,886	3,886
Sweetwater Area	0	0	17,432	8,251
Umatilla	1	0	1,872	1,872
Wahneta	0	0	3,329	3,329
Washington Park/N Miami Beach	0	0	4,811	7,240
Wimauma	0	0	1,477	1,477

TABLE 6: Qualifying Areas in Big Cities

Area Identification	*Designation*		*Population*	
	EZ	*CRA*	*Area*	*City*
Fort Walton Beach CRA	0	1	2,542	20,289
Homestead EZ	1	0	9,617	20,668
Winter Haven Area	0	0	1,559	21,119
Winter Haven Area	0	0	7,118	21,119
Oakland Park Area	0	0	7,818	23,035
Bradenton	1	0	5,747	30,170
West Little River EZ	1	0	6,352	32,492
Panama City EZ	1	0	543	33,346
Fort Pierce CRA	0	1	6,608	33,802
Fort Pierce EZ	1	0	2,020	33,802
Hallandale Area	0	0	4,590	36,517
Ocala CRA	0	1	3,678	37,170
Deerfield Beach Area	0	0	6,566	39,193
Coral Gables/Coconut Grove	0	0	3,700	43,241
Melbourne Area	0	0	7,122	46,536
Melbourne CRA	0	1	7,825	46,536
Lakeland Area	0	0	3,405	47,406
Lakeland Area	0	0	452	47,406
Lakeland Area	0	0	2,471	47,406
Lakeland CRA	0	1	3,445	47,406
Pompano Beach Area	0	0	5,358	52,618
Pompano Beach CRA	0	1	11,718	52,618
Daytona Beach CRA	0	1	1,107	54,176
Daytona Beach EZ	1	0	5,911	54,176
Pensacola Area	0	0	9,298	57,619
Pensacola CRA	0	1	10,500	57,619
West Palm Beach CRA	0	1	4,002	63,305
West Palm Beach EZ	1	0	8,072	63,305
Gainesville CRA	0	1	487	81,371
Gainesville EZ	1	0	6,116	81,371
Tallahassee Area	0	0	8,212	81,548
Tallahassee EZ	1	0	10,450	81,548
Clearwater CRA	0	1	2,162	85,528
Clearwater EZ	1	0	3,952	85,528
Hollywood Area	0	0	3,052	121,323
Hollywood CRA	0	1	5,290	121,323
Orlando CRA	0	1	9,655	128,291
Orlando EZ	1	0	14,614	128,291
Hialeah CRA	0	1	25,749	145,254
Hialeah EZ	1	0	41,181	145,254
Fort Lauderdale CRA	0	1	4,834	153,276
Fort Lauderdale EZ	1	0	15,431	153,276
St. Petersburg Area	0	0	18,255	238,647
St. Petersburg CRA	0	0	33,858	238,647
St. Petersburg EZ	1	0	21,553	238,647
Tampa Area	0	0	13,128	271,523
Tampa Area	0	0	60,636	271,523
Tampa CRA	0	1	3,890	271,523
Tampa CRA	0	1	5,881	271,523
Tampa EZ	1	0	13,356	271,523
Miami-Allapattah/Melrose	0	0	43,608	346,865

TABLE 6 Continued: Qualifying Areas in Big Cities

Area Identification	*Designation*		*Population*	
	EZ	*CRA*	*Area*	*City*
Miami-Downtown EZ	1	1	4,390	346,865
Miami-Florida City Area	0	0	5,744	346,865
Miami-Lake Lucerne	0	0	7,153	346,865
Miami-Larchmont EZ	1	0	13,149	346,865
Miami-Little Havana EZ	1	0	55,403	346,865
Miami-Model City EZ	1	0	22,996	346,865
Miami-Naranja	0	0	13,026	346,865
Miami-Overtown	1	0	15,563	346,865
Miami-South Beach CRA	0	1	45,592	346,865
Miami-South Miami/Lee Park	0	0	3,781	346,865
Jacksonville Area	0	0	4,455	540,920
Jacksonville Area	0	0	7,296	540,920
Jacksonville Area	0	0	7,036	540,920
Jacksonville CRA	0	1	2,179	540,920
Jacksonville CRA1	0	1	2,136	540,920
Jacksonville EZ	1	0	103,456	540,920

TABLE 7: Number of Qualifying Cities by Designation Status

City Designation Status	*Small Cities (N=30)*	*Big Cities (N=29)*
Number with one or more designated areas	9	24
7 areas designated	0	1
3 areas designated	0	2
2 areas designated	1	8
1 area designated	8	13
Number with no designated areas	21	5
2 areas qualified	0	1
1 area qualified	21	4

TABLE 8: Number of Areas Designated by Program Type

	Area Location	
Number of Qualifying Areas	*Small City*	*Big City**
Total	31	67
By Area Program Designation		
EZ	7	21
CRA	1	21
EZ+CRA	1	0
All Programs	9	42

*The number of areas does not match the number of EZ's and CRA's established because several original areas in Miami were combined to form one EZ.

TABLE 9: Proportion of Small Qualifying Cities*

City Government Structure	*Application Decision*	
	Did Not Apply (N=22)	*Applied (N=9)*
Representation Type		
District-level elections	0.1818	0.3333
At-large elections	0.8182	0.6667
Type of Management		
Council Manager	0.4545	0.6667
Strong Mayor	0.1364	0.0000

*None of the proportions were found to be significantly different using a difference in population proportions test.

TABLE 10: Difference of Means for Small Qualifying Cities, 1980

City Variable	*Cities by Application Status*				*Difference in Means**		
	Did Not Apply (N=22)		*Applied (N=9)*				
	Mean (X_0)	*S. D.*	*Mean (X_1)*	*S. D.*	*X_1-X_0*	*Est. S.D.*	*T-stat*
Population	6,903	4,208	8,087	4,932	1,184	49,366,757	0.0000
Median Income	12,594	2,873	12,044	2,004	-550	17,906,748	0.0000
Median Property Value	38,564	18,332	31,478	4,598.	-7,086	629,786,153	0.0000
Unemployed	639	426	853	597	214	580,432	0.0004
Unemployment Rate	0.09	0.0197	0.10	0.0162	0.01	0.0009	9.4596

*Estimates were calculated using a standard difference in population means test.

TABLE 11: Difference in Means for Small Qualifying Areas in Small Cities

	Non-designated Areas (N=22)		*Designated Areas (N=9)*		*Difference in Means**		
Area Measure	***Mean (X_0)***	***S. D.***	***Mean (X_1)***	***S. D.***	***X_1-X_0***	***Est. S.D.***	***T-stat***
Population							
1980	6,206	4,038	6,820	6,531	614	59,582,260	0.0000
1990	7,420	3,820	7,988	6,541	567	56,531,596	0.0000
Log Change	0.2276	0.3893	0.2951	0.4840	0.0676	0.4406	0.1533
Unemployed/Population Ratio							
1980	0.0908	0.0190	0.1072	0.0313	0.0164	0.0013	12.2067
1990	0.0408	0.0203	0.0431	0.0186	0.0023	0.0010	2.3109
Log Change	-0.8883	0.4219	-0.9955	0.4283	-0.1072	0.4536	-0.2365
Median Property Value							
1980	37,509	17,258	28,550	6,472	-8,959	574,263,125	0.0000
1990	36,570	18,568	30,618	5,054	-5,952	648,735,626	0.0000
Log Change	-0.0235	0.2017	0.0864	0.3343	0.1100	0.1524	0.7217
Median Household Income							
1980	12,556	2,882	11,464	3,003	-1,093	21,486,827	-0.0001
1990	13,064	3,950	12,245	949	-819	29,186,760	0.0000
Log Change	-0.0260	0.1737	-0.0941	0.2952	-0.0680	0.1159	-0.5868

*Estimates were calculated using a standard difference in population means test.

TABLE 12: Comparison of Standard Error Estimates

Log Change Measure	*Impact Estimate*	*S.D. (Diff. of Means)*	*S.D. (OLS)*
Population	.0676	.4406	.1652
Unemployment/Population	-.1072	.4536	.1676
Median Property Value	.1100	.1524	.0972
Median Household Income	-.0680	.1159	.0848

TABLE 13: Significant Impacts for Regional Groupings

Region Group*	**Estimated Impact of Log Change in Population**	**S.D. (p- value)**
Economic Area 30	.5703	.2634 (.0672)
Economic Areas 29+35+36+81	.3515	.1758 (.0654)

*See text for a description of the economic areas.

TABLE 14: Significant Impacts for RU Code Groupings

RU Group Code*	**Estimated Impact of Log Change in Median Household Income**	**S.D. (p- value)**
RU=0 (large metro, central county)	.4381	.2249 (.0774)
RU = 6 (nonmetro, urban+adjacent)	-.3784	.0289 (.0040)

*See Table 1 for a full description of the code classification.

TABLE A1: Florida County Reference Codes

County	Metro Dummy	Economic Area	Urban Influence	Rural-Urban 1983	Rural-Urban 1989
Alachua	1	29	2	3	3
Baker	0	29	6	6	6
Bay	1	35	2	3	3
Bradford	0	29	6	3	6
Brevard	1	30	2	2	2
Broward	1	31	1	0	0
Calhoun	0	35	6	6	8
Charlotte	1	33	2	4	3
Citrus	0	30	6	6	4
Clay	1	29	2	2	2
Collier	1	32	2	4	3
Columbia	0	29	5	6	6
Dade	1	31	1	0	0
DeSoto	0	33	6	6	6
Dixie	0	29	9	9	9
Duval	1	29	2	2	2
Escambia	1	81	2	2	2
Flagler	1	30	2	6	2
Franklin	0	35	8	7	7
Gadsden	1	35	2	3	3
Gilchrist	0	29	6	8	8
Glades	0	31	6	8	8
Gulf	0	35	6	6	6
Hamilton	0	29	9	9	9
Hardee	0	30	6	6	6
Hendry	0	31	6	6	6
Hernando	1	34	1	1	0
Highlands	0	30	6	6	6
Hillsborough	1	34	1	0	0
Holmes	0	36	8	7	7
Indian River	0	31	5	4	4
Jackson	0	35	6	6	6
Jefferson	0	35	6	6	6
Lafayette	0	29	9	9	9
Lake	1	30	1	4	1
Lee	1	32	2	3	2
Leon	1	35	2	3	3
Levy	0	29	6	8	8
Liberty	0	35	6	8	8
Madison	0	35	8	7	7
Manatee	1	33	2	3	2
Marion	1	30	2	3	3
Martin	1	31	2	3	2

TABLE A1 Continued: Florida County Reference Codes

County	Metro Dummy	Economic Area	Urban Influence	Rural-Urban 1983	Rural-Urban 1989
Monroe	0	31	3	5	4
Nassau	1	29	2	2	2
Okaloosa	1	81	2	3	3
Okeechobee	0	31	6	6	6
Orange	1	30	1	2	0
Osceola	1	30	1	2	1
Palm Beach	1	31	2	2	2
Pasco	1	34	1	1	0
Pinellas	1	34	1	1	0
Polk	1	30	2	2	2
Putnam	0	29	5	6	6
St. Johns	1	29	2	2	2
St. Lucie	1	31	2	3	2
Santa Rosa	1	81	2	2	2
Sarasota	1	33	2	3	2
Seminole	1	30	1	2	0
Sumter	0	30	4	6	6
Suwannee	0	29	8	7	7
Taylor	0	35	8	7	7
Union	0	29	6	8	8
Volusia	1	30	2	2	2
Wakulla	0	35	6	8	8
Walton	0	81	6	6	6
Washington	0	36	6	6	6