THE INFLUENCE OF AMENITIES AND QUALITY OF LIFE ON REGIONAL DEVELOPMENT IN ALABAMA

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Abstract: A structural model of regional economic growth is estimated using Two-Staged Least Squares method to determine the role of quality of life attributes on economic growth. Selected socioeconomic indicators are constructed mainly from U.S Census Bureau and regressed on three simultaneous equations explaining the major proxy indicators of growth in Alabama. Results show strong relationship between initial conditions, quality of life measures and rural growth. Though most conform to theory and expectations, some attributes play different role in economic growth.

Keywords: Quality of life, amenities, economic growth, development.

Introduction

Quality of life may mean different things to different people, encompassing such notions as "well-being," centered on the individual, to "good place," centered on the location (Dissart and Deller, 2000). This elusive concept is hard to quantify and is an interaction of social and health factors, changes in life style (slow pace of living), less crime, better cost of living, better environmental qualities, and access to recreational opportunities (Beesley and Bowles, 1991). Quality of life is associated with increased economic activity and the well being of the population in terms of socioeconomic factors. It is not surprising therefore, that models of regional economic growth often focus on the interdependencies of household residential and firm location choices (Steinnes and Fisher, 1974; Carlino and Mills, 1987; Deller, Tsai, Tsahung-Hsiu, Marcouiller, and English, 2001) which addresses the notion of whether "people follow jobs" or "jobs follow people".

Carlino and Mills (1987) address this causation and interdependency in their classic two-dimensional equation system; noting that households and firms are geographically mobile. They emphasize that households aim to maximize utility of goods and services, location of residence relative to workplace and spatially distributed amenities. This view is also emphasized in traditional migration literature; people migrate to capture higher wages or income. Firms on the other hand seek to maximize profits and are assumed to migrate so as to lower cost of production through regional comparative advantages, transportation infrastructure, regional labor supply variations and agglomeration effects (Rosenberger, Gebremedhin and Hailu, 2002).

In order to capture the role of wages or income, Deller, Tsai, Marcouiller and English (2001) expanded Carlino and Mills (1987) approach from a two-dimensional

"people versus jobs" to a three-dimensional "people versus jobs versus income". In this paper, we follow Deller et al. (2001) and provide insights on how quality of life amenities influence economic growth in Alabama. Many counties in Alabama are remote and observe low population densities as well as old and declining populations. The infrastructure and public service facilities are also wanting, as they are very expensive to provide and maintain. These counties, especially in the "Black Belt region", are generally dependant on primary industry and observe the lowest incomes both in the state and the nation.

Remoteness must not be strictly interpreted as synonym of great distance to urban centers, however. Some counties close to urban centers are remote due to topographic, cultural or technical barriers whilst other counties, at great distance from large population settlements may be easily accessible if transportation infrastructures are good. Many of these remote counties—by no means all—contain valuable countryside features including natural habitats, scenic landscapes, traditional farming practices, historic sites, cultural activities etc. This wide range of highly prized traits, generally referred to as 'rural amenities', are for some of these counties the most valuable asset, a factor of comparative advantage relative to other locations.

Although quality of life amenities have in most cases a public good nature, they also provide some private market opportunities to contribute to economic development of a region. Furthermore, over the recent years more sophisticated consumer preferences have increased demand for specialty products and services, widening the range of those local resources regarded valuable. New economic opportunities are thus arising for amenity-based niche marketing, mainly of specialty products (food and crafts) and of an emerging rural tourism sector. But niche marketing, so often required for amenity-based

development, is a highly competitive industry that needs very specific aptitudes and a professional approach, which are not usually found in remote rural areas. Thus, we attempt to model the structural relationships while simultaneously isolating the influence of amenity attributes on regional economic growth in Alabama.

Literature Review

Recent studies evaluate the term quality of life within local jurisdictions and among nations (Gerdtham and Johannesson, 1997; Mencken, 1998; Sousa-Poza and Sousa-Poza, 2000). Despite the growing literature, however, there is little agreement on the term and its measure. Numerous studies have shown that quality of life plays an increasingly important role in community economic growth (Dissart and Deller, 2000; Halstead and Deller, 1997; Rudzitis, 1999). Economic performance has been found to show a strong positive relationship with population's health status, education, employment, income levels and social amenities in general (Bukenya et al, 2002). Quality of life measures and development affect each other with better quality of life leading to a higher level of development and vice versa.

Other studies have linked age, quality of life and development noting that being elderly is detrimental to better quality of life and economic growth similar to being single or lack of education , being unemployed and or having low household disposable income. (Bukenya et al, 2003a; Bukenya et al, 2003b; Deller et al 2002; Pressman, 1998; Bergmann, 1974; Strober and Arnold, 1987; Sawhill, 1976; Northrop, 1990).

Increasingly people appear to be placing greater value on natural resource-based amenities and the related attributes that contribute to regional quality of life. Gottlieb (1994) even suggests that using amenity attributes as an economic tool. Even if such an attempt fails to create additional jobs and income, constituents presumably would benefit.

However there are concerns that such changes may yield higher levels of local underemployment, lower income levels and generally lower overall economic well-being (Marcouiller and Deller, 1996).

Nord and Cromartie (1997) and Beale and Johnson (1998), suggest that natural amenities and other non-market attributes that contribute to overall quality of life may be the driving factor for rural American areas that are growing rapidly. Rural areas classified as "recreational", account for 12 percent of the non-metropolitan counties and 15 percent of the non-metropolitan population. Furthermore, they establish that population growth in such counties consistently exceed that of other non-metropolitan areas as well as metro areas. While defining recreational dependency, English, Marcouiller, and Cordell (2000) found that recreational counties grow faster in terms of employment, income, housing levels and value and population than other non-metropolitan counties. Henry, Barkley, and Bao (1997) express similar views while analyzing spread and backwash effects of urban growth on surrounding areas. Their research found that rural areas with higher levels of certain amenity attributes were more likely to capture positive spread effects. Those with lower levels of amenities tend to lose economic activities to the nearby growing urban center.

In contrast, Duffy-Deno (1997) found that expanding wilderness areas in the western United States has no effect on the county level resource-based employment. Roback (1980, 1988) and Blanchflower and Oswald (1996) also suggest that amenities and quality of life factors are capitalized into wages and rent in a manner that could hinder economic growth policies. They argued that given mobile homogenous workers who locate in the areas to maximize utility and equally mobile profit maximizing firms in spatial equilibrium regions will offer wage rates and land rental prices that will exactly

offset benefits that accrue from their natural resource amenity differences. Workers residing in low amenity regions must be compensated via higher wages compared to those locating in high amenity areas. Blanchflower and Oswald extend this result and suggest that in a world of unemployment insurance and minimal public support programs, persons in high amenity areas would even be willing to accept periods of unemployment compared to those living in low amenity regions. There is increasing evidence that regions with high levels of amenities should experience lower wages and higher unemployment (Deller and Hsiu, 1999).

Conventional wisdom seems to imply that as the nation becomes wealthier, its demand for amenities and better quality of life increase. Simpler descriptive literature and the analytical migration literature support this notion. Amenities and quality of life in general play an increasingly important role in migration decisions (Greenwood, 1985) and both economic and quality-of-life factors have been found to significantly determine migration (Graves, 1979, 1980, 1983; Porell, 1982) as well. However, migration is more responsive to marginal changes in economic factors than to quality-of-life factors although in some studies, amenities and quality of life seem to have played a more important role in the migration decision than did economic factors (Greenwood, 1985). Still the rigorous theoretical result of Roback and subsequent empirical work suggest that we do not fully understand the relationship between amenities, quality of life and rural economic growth.

A problem exists in the available literature that attempts to link amenity attributes to regional economic performance. As a result, ad hoc theoretical and empirical approaches have been adopted, particularly in confining the amenity variable, with some researchers using one or two attributes to represent amenities (e.g., Carlino and Mills,

1987). The common practice is to confine amenities to a single dimensional attribute such as climate or crime rate or a selected list of attributes (Andrews, 1980; Gottlieb, 1994). For instance, USDA's Economic Research Service (1997) define natural amenities as a summary index of mild sunny winters, moderate summers, with low humidity, varied topography, mountains, and the abundance of water (Nord and Cromartie, 1997).

Methodology

The approach used in our analysis follows that of Carlino and Mills (1987) and Deller, Tsai, Tsahung-Hsiu, Marcouiller, and English (2001). We assume that utility maximizing households migrate in search of utility derived from the consumption of market and non-market goods and profit-maximizing firms on the other hand become mobile when looking for regions that have lower production costs and higher market demand. They expressed a three dimensional approach to quality of life and economic growth in a simultaneous equation system as follows:

$$P^* = f\left(E^*, I^* \middle| \Omega^P\right) \tag{1}$$

$$E^* = f\left(P^*, I^* \middle| \Omega^E\right) \tag{2}$$

$$I^* = f\left(P^*, E^* \middle| \Omega^I\right) \tag{3}$$

where P^*, E^*, and I^* are equilibrium levels of population, employment, and per capita income; Ω^P, Ω^E and Ω^I are vectors of variables describing measures of quality of life and amenity attributes. Relying on the equilibrium conditions laid out above, a simple linear representation of those conditions can be expressed as:

$$P^* = \alpha_{0p} + \beta_{1p}E^* + \beta_{2p}I^* + \Sigma\delta_{Ip}\Omega^P \tag{4}$$

$$E^* = \alpha_{0E} + \beta_{1E}P^* + \beta_{2E}I^* + \Sigma\delta_{IE}\Omega^E \tag{5}$$

$$I^* = \alpha_{0I} + \beta_{1I}P^* + \beta_{2I}E^* + \Sigma\delta_{II}\Omega^I \tag{6}$$

In line with Nerlovian concept (Nerlove, 1979), population, employment, and income likely adjust to their equilibrium levels with substantial lags (i.e., initial conditions). Thus, the partial adjustment equations to the equilibrium levels are:

$$P_t = P_{t-1} + \lambda_p (P^* - P_{t-1}) \tag{7}$$

$$E_t = E_{t-1} + \lambda_E (E^* - E_{t-1}) \tag{8}$$

$$I_t = I_{t-1} + \lambda_I (I^* - I_{t-1}) \tag{9}$$

After slight rearrangement of terms this yields:

$$\Delta P = P_t - P_{t-1} = \lambda_p (P^* - P_{t-1}) \tag{10}$$

$$\Delta E = E_t - E_{t-1} = \lambda_E (E^* - E_{t-1}) \tag{11}$$

$$\Delta I = I_t - I_{t-1} = \lambda_I (I^* - I_{t-1}) \tag{12}$$

where λ_p, λ_E and λ_I are speed of adjustment coefficient to the desired levels of population, employment, and income, respectively, which are generally positive; ΔP, ΔE and ΔI are regional changes in population, employment and per capita income, respectively; and P_{t-1}, E_{t-1} and I_{t-1} are initial conditions of population, employment and per capita income. By substituting equations (4), (5), and (6) into equations (10), (11) and (12), we obtain:

$$\Delta P = \lambda_P (\alpha_{0p} + \beta_{1p} E^* + \beta_{2p} I^* + \Sigma \delta_{Ip} \Omega^P - P_{t-1}) \tag{13}$$

$$\Delta E = \lambda_E (\alpha_{0E} + \beta_{1E} P^* + \beta_{2E} I^* + \Sigma \delta_{IE} \Omega^E - E_{t-1}) \tag{14}$$

$$\Delta I = \lambda_I (\alpha_{0I} + \beta_{1I} P^* + \beta_{2I} E^* + \Sigma \delta_{II} \Omega^I - E_{t-1}) \tag{15}$$

This can be solved into,

$$\Delta P = \lambda_P \alpha_{0p} + \lambda_P \beta_{1p} E^* + \lambda_P \beta_{2p} I^* + \lambda_P \Sigma \delta_{Ip} \Omega^P - \lambda_P P_{t-1} \quad (16)$$

$$\Delta E = \lambda_E \alpha_{0E} + \lambda_E \beta_{1E} P^* + \lambda_E \beta_{2E} I^* + \lambda_E \Sigma \delta_{IE} \Omega^E - \lambda_E E_{t-1} \quad (17)$$

$$\Delta I = \lambda_I \alpha_{0I} + \lambda_I \beta_{1I} P^* + \lambda_I \beta_{2I} E^* + \lambda_I \Sigma \delta_{II} \Omega^I - \lambda_I I_{t-1} \quad (18)$$

By re-arranging (10), (11) and (12), we replace the unobservable equilibrium P*, E* and I*, in (16), (17) and (18) to get the general form,

$$\Delta P = \alpha_{0p} + \beta_{1p} P_{t-1} + \beta_{2p} E_{t-1} + \beta_{3p} I_{t-1} + \gamma_{1p} \Delta E + \gamma_{2p} \Delta I + \Sigma \delta_{Ip} \Omega^P \quad (19)$$

$$\Delta E = \alpha_{0E} + \beta_{1E} P_{t-1} + \beta_{2E} E_{t-1} + \beta_{3E} I_{t-1} + \gamma_{1p} \Delta P + \gamma_{2E} \Delta I + \Sigma \delta_{IE} \Omega^E \quad (20)$$

$$\Delta I = \alpha_{0I} + \beta_{1I} P_{t-1} + \beta_{2I} E_{t-1} + \beta_{3I} I_{t-1} + \gamma_{1I} \Delta E + \gamma_{2I} \Delta P + \Sigma \delta_{II} \Omega^I \quad (21)$$

Note that the speed of adjustment coefficient (λ) is embedded in all the linear coefficient parameters. This framework is particularly useful because it allows us to capture structural relationships while simultaneously isolating the influence of quality of life amenity attributes on regional economic growth. In other words, we estimate short-term adjustments (i.e., ΔP, ΔE, and ΔI) to long-term equilibrium (i.e., P^*, E^*, and I^*).

Data Sources and Description

Data used for this analysis are drawn from several sources including the U.S. Census Bureau, Alabama Center for Economic and Business Research, and the U.S. Department of Labor. We construct and use county growth rates in population, employment and per capita income from 1990 to 1999 as our endogenous variables.

The design of the independent variables is based on previous studies (English, Marcouiller, and Cordell, 2000; Duffy, 1997; Deller and Hsiu, 2001) which hypothesized four broad classifications/categories of factors believed to influence regional economic

growth: markets, labor, government, and amenity attributes. The list of explanatory variables included in each of the classifications is summarized in Table 1.

----------Table 1 about here ----------

Market characteristics comprise of factors that influence demand in regional markets. Such factors describe the region's market size and consumption ability. They include: percent of population aged 65 years and above, percent of population aged 18 years and below, percent of nonwhite population and population density. It is presumed that a high percent of nonwhite population lead to low overall growth levels due a contingent of social, cultural, political and economic factors. Population density is measured in number of persons per square mile and is hypothesized to have a negative impact on the specified growth variables.

The labor categorized variables measure human capital stocks and flows and how they influence the market and regional growth. These include, rate of unemployment, crime index, education levels and number of physicians. Crime index is computed by summing up serious crime in each county. Serious crimes are murders, forcible rapes, robberies, burglary, motor vehicle theft, arsons and larcenies. High crime is believed to be detrimental to economic growth. Education is measured by the percent of population aged 19 years and above with high school diplomas. The number of non-federal physicians is used to measure the adequate availability of medical practitioners.

Government finance is crucial in growth as expenditure on infrastructural development stimulates economic activity and attracts households and investments. Government expenditure is used to capture the role of government in Alabama. Due to unavailability of 1990 data, we use government expenditure for 1986-87 which is the closest available data.

Amenity attributes such as vegetation, open space, and built extensions to natural amenities are also key components of quality of life that play a central role in economic growth and development. We specify two amenity measures. First, we employ a natural amenity index drawn from the USDA's Economic Research Service. The index is a composite measure of county physical characteristics presumed to enhance the attractiveness of a place. The index[1] combines six measures of climate, topography, and water that reflect environmental qualities people tend to prefer. The measures are warm winter, winter sun, temperate summer, low summer humidity, topographic variations and water area.

The second amenity measure is a recreational amenity index constructed for Alabama counties based on county recreational and leisure sites. To do this, we use the Alabama Bureau of Tourism and Travel data set. The Bureau maintains an extensive county-level data set documenting facilities and resources that support outdoor recreation activities. As noted by Deller et al (2001), many of these resources are precisely the amenities that contribute to the overall quality of life of the region and are presumed to influence economic growth. Counties rich in these sites benefit from tourism and its associated economic activities. The recreational and leisure attraction sites utilized include, boating, camping, fishing, hiking, golfing, wildlife and wilderness, botanical sites, birding, hunting, beach, horse backing, biking, and skiing. The index is development by generating a physical count of these sites and ranking counties based on the number of sites in each category on a scale of 1 through 5—the higher the score the richer the county in recreational and leisure attractions.

[1] Counties are scored on a scale ranging from 1 to 7 based on these attributes with higher score representing richness in these physical characteristics (See ERS, 1999 for the methodology used to compute the index).

Empirical Results

For discussion purposes, we organize the estimated results into four groups—initial conditions; marketing characteristics; and labor, government, and amenity attributes—summarized in Tables 2, 3 and 4, respectively. In all the tables, the first column presents results for the population growth equation. The employment growth equation is presented in the second column while the third column presents per capita income growth equation. While some findings conform to theory and the literature, others are in contradiction and need further observation and explanations. First, initial conditions are shown (Table 2) to play an important role in determining overall growth levels; a finding in line with economic theory. Specifically, initial employment, population and per capita income levels have negative and statistically significant coefficients for each respective equation; thus supporting the notion of rural revitalization.

---------- Table 2 about here ----------

Counties that had higher levels of employment and per capita incomes, in the beginning of the period (1990) tend to experience higher rates of population growth probably from in-migrations as neighboring populace take advantage of the high incomes and employment opportunities. While initial employment is a strong factor influencing population growth particularly migration, initial per capita income is not as strong and this is demonstrated by its insignificance. A job seeker's decision to move from one area to another in search of employment is determined by the existence of job opportunities rather than per capita income; although the later is also of importance. Higher initial levels of employment also appear to lead to higher growth levels in per capita income

while higher initial levels in per capita income strongly lead to lower growth levels in employment.

Higher initial per capita income leads to low employment growth in later years while against our expectations, high initial population levels stimulates higher employment growth in later years. In line with study expectations, high population level in the beginning of the period results in low per capita income growth. Notably, initial conditions appear to be more influential in the population growth followed by employment growth, but least influential in relation to per capita income growth.

As expected, employment growth over the ten year period is positively related to population and per capita income growth possibly due to influx of labor while declining employment growth leads to out-migration as labor shifts to other growing areas. In addition, an increase in employment growth leads to positive and significant increase in per capita income; because high employment rate results into improved personal income of the population. Also high population growth leads to decline in per capita income growth as income is spread over an increasing population. An increase in the change in per capita income results into increasing employment growth. This is true since economic theory stipulates that high income promotes savings and investments which are very instrumental in employment creation.

Contrary to our expectations, the estimated coefficients show an increase in population growth to have a positive significant effect on employment rate while high per capita income growth though insignificant, leads to a decline in population growth. There are no doubts that population as a resource and demand force, is a strong stimuli for investments and employment creation hence the positive relationship.

Factors that describe the regions market size and consumption ability seem to influence economic growth as shown in Table 3. Looking at population density, the estimated coefficients are negative both in the employment and per capita income equations, but positive in the population equation. The population density variable is statistically significant at 1 percent in the employment growth equation, but insignificant in the per capita income equation. An increase in population density if not matched by equal or greater increase in employment, leads to a decline in employment and per capita income, respectively which appears to be the case in the employment and per capita growth equations.

---------- Table 3 about here ----------

The coefficient for the percentage of non-white population in Alabama is significantly negative in both employment and per capita income equations—supporting previous studies (Jaret, Reid and Adelman, 2003) that associate non-white population with low levels of employment and per capita income. Also, the results show a negative relationship between percentage of population over age sixty-five and growth rates, except in the per capita income equation. We expected the elderly to have a negative relationship with population, employment and income growth, particularly in rural areas. Our expectations were based on previous work (Lee and Lassey, 1982; Patton, 1975; Youngmans, 1967), which showed that many social and economic difficulties afflict the rural elderly than their urban counterparts. The positive sign observed in the income equation concurs with Lee and Lassey's (1980) study on what they refer to as "young-olds", recently retired elderly people, migrating into the rural areas with sufficient health and financial resources enabling them to live where they choose.

Surprisingly, the percent of population aged eighteen years and below have a strong and statistically significant positive relationship with per capita income. However, this young population has a negative relationship with population and employment growth variables in support of theory and literature.

Turning to labor characteristics (Table 4), the estimated coefficients have a weak influence on regional growth and are more significant in the population equation. First, unemployment has a negative impact on the economic development variables, which is apparent in both employment and per capita income growth. Lack of personal income due to unemployment leads to low per capita income. This finding concurs with several previous studies. For instance, both Bukenya et al (2003a) and Deller et al (2001) show that unemployment lead to lower quality of life and negate development. However, contrary to our expectations, unemployment demonstrates a positive and significant relationship with population growth.

---------- Table 4 about here ----------

Also, the percentage of population aged over eighteen with high school diploma and above has a positive and significant impact on population growth. Contrary to theory however, the variable has a negative, but insignificant effect in both employment and per capita income equations.

Security is an important determinant of satisfaction with life. As such, escalating crime is expected to cause out migration as people move out of high crime areas. This is evident in the negative and significant coefficient for the crime variable in the population growth equation. Generally crime is low in Alabama, particularly in the rural counties, which might explain the positive signs observed in employment and per capita income growth equations. This finding however, is contrary to the general consensus that

population and firms tend to relocate from insecure areas. As anticipated, an increase in the number of nonfederal physicians boosts employment and per capita income growth, but the same variable has an unusual negative relationship in the population equation. This result is questionable given the general consensus that people tend to concentrate in places with adequate health and medical facilities. Again, the physician variable is insignificant in all growth equations; implying that it does not play any significant role in growth.

Government expenditure has a positive and significant relationship with changes in population and per capita income. It stimulates growth in population and per capita income, since funding local infrastructure and public services benefits and attracts labor related population growth and raises per capita income. This is confirmed by the positive and significant relationship observed in both population and per capita income equations. It is worthy recognizing that increasing government expenditure may not necessarily enhance growth automatically. For the government to increase expenditure, it has to increase taxation for individuals and business which may be counteractive to the economy. This explains the negative effect observed in the employment growth equation.

Lastly, the natural amenity variable has a positive impact on population and employment growth, supporting our assumptions and expectations that natural amenities attract people and businesses. This revelation concurs with previous studies that have associated high natural amenity attributes to positive regional growth (Deller et al., 2001). Also, the recreation amenity variable has negative effect on population and per capita income, but a positive in employment growth. Though not significant, the negative effect is against our expectation. As for per capita income, natural amenity variable has a significantly negative impact on growth. This finding supports Roback's work in which

he postulates that people are currently willing to relocate to places with lower wages but rich in natural amenities—and explains the positive relationships in population growth.

Conclusion

In conclusion, the empirical results of this study support previous studies on similar topic. Historical and initial conditions indicate a strong impact on growth and seem to determine the level of renaissance and the economic convergence theory. Counties with high growth levels at the beginning of the period tend to have lower growth rates and vice versa. The growth variables also appear to be strong predictors of each other as demonstrated by the simultaneity of the structural growth model and the significance of the endogenous variables.

By highlighting the role played by all the categories of exogenous variables, the paper shows that amenities and quality of life influence economic development in Alabama. However, each individual attribute has a unique effect on each growth variable. Even though results show relationships between quality of life variables and economic growth, it is interesting to note how some socioeconomic factors have strange influence on regional growth in Alabama. Market related characteristics are better predictors in employment growth equation, but are weak predictors in the population growth equation. Labor related factors are better predictors for population growth while government expenditure is a strong variable in estimating per capita growth and population growth. Amenities apparently are weak in all the growth variables. For policy discussions, our analysis suggests a broad-based and integrated approach to development with emphasis on measures that stimulate growth.

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Table 1. List of Explanatory Variables*

Market Characteristics	Percentage of the population aged 65 years and over per county.
	Percentage of the population aged 18 years and below per county.
	Percentage of nonwhite population per county.
	Population density per square miles per county.
Labor Characteristics	Percent of persons aged over 18 with high school diploma per county.
	Rate of unemployment per county.
	Crime index per county.
	Number of physicians per county.
Government Characteristics	Government expenditure per county.
Amenity Characteristics	Natural amenities
	Recreational amenities

*All variables are based on 1990 data except government expenditure which is based on 1986-87 period.

Table 2. Estimated Initial and Historical Conditions

	Δ Population	Δ Employment	Δ Per Capita Income
Per Capita Income 1990	14.48263	-7.3328	-23.9842**
	(16.2279)	(16.8715)	(9.0694)
Population 1990	-236.8713**	197.4538**	-6.3996
	(47.8499)	(32.5385)	(18.8012)
Employment 1990	188.6834**	-171.1008**	7.9861
	(44.1627)	(30.4689)	(16.0010)
Δ Employment	0.7138**	-----	0.1826**
	(0.1551)		(0.0781)
Δ Population	-----	0.6865**	-0.0178
		(0.1174)	(0.0727)
Δ Per Capita Income	-0.0614	0.6046**	-----
	(0.2435)	(0.2587)	

*(**) represents 5 and 1 percent significance levels, respectively and standard errors are reported in parenthesis.

Table 3. Estimated Market Characteristics

	Δ Population	Δ Employment	Δ Per Capita Income
Market Characteristics			
% Pop over 65 plus	-0.2883	-1.5413*	1.3866**
	(0.9811)	(0.9883)	(0.6179)
% Pop under 18 years	-0.4443	-0.9070	2.1970**
	(1.0627)	(1.0731)	(0.4664)
% Pop Non-White	-----	-0.3514**	-0.0602
		(0.1624)	(0.0804)
Pop density	-----	-0.0655**	-0.0025
		(0.0305)	(-0.0226)

*(**) represents 5 and 1 percent significance levels, respectively and standard errors are reported in parenthesis.

Table 4. Estimated Labor, Government and Amenity Characteristics

	Δ Population	Δ Employment	Δ Per Capita Income
Labor Characteristics			
% Pop High Sch. Diplomas	75.2323* (38.4661)	-30.0739 (-44.6056)	-1.9419 (22.3722)
Unemployment rate	0.9688* (0.6400)	-----	-0.2576 (0.4975)
Crime Index	-63.3226* (33.0188)	47.3797* (24.9445)	19.1591* (12.0478)
Number of physicians	-0.0929 (0.0654)	0.0782 (0.0567)	0.0187 (0.0317)
Government Characteristic			
Government Expenditure	26.3525** (8.3706)	-12.6762 (9.9962)	8.5518* (5.4001)
Amenities			
Amenity Scale	0.7947 (1.2159)	1.1723 (1.4370)	-1.8585** (0.7582)
Recreational Amenity Index	-0.9172 (1.2523)	0.4856 (1.1822)	-0.7022 (0.5467)
Adjusted R^2	0.7989	0.7144	0.4167
F-Statistics	18.4761**	12.0073**	4.1428**
D-W Statistic	1.8272	1.8553	1.9071

*(**) represents 5 and 1 percent significance levels, respectively and standard errors are reported in parenthesis.