Smart Growth and the Resurgence of New Jersey's Urban Centers: Is there a Link?

Matthew Mates
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[Abstract]

One important goal of smart growth is that is seeks to channel growth into developed areas, especially declining urban centers. To test the link between a recent resurgence in New Jersey's urban centers and Smart Growth policy. We conduct the test by examining the supply elasticity of municipalities surrounding urban centers. We measure supply elasticity by calculating the responsiveness of building permits to change in house prices. We find that a rise in house price is main determinant of growth in urban centers despite if the amount of housing permits is rising or falling.

I. Introduction

Since 1970, the majority of major U.S. cities have suffered from stagnant or declining populations as growing suburban areas have flourished. New Jersey cities have generally followed this national trend. During the 1970's, when New Jersey cities were suffering the most, 19 of the 20 fastest growing municipalities were New Jersey townships. In the 1980's, the picture for New Jersey cities was somewhat less bleak: only 15 of the 20 fastest growing municipalities were townships and similar levels of relative growth were obtained during the 1990's and into the early parts of the 2000's (Future Facts, 2009). However, during the past two years, older New Jersey cities have been attracting and/or retaining their population better than newer locations. Cities that have typically suffered in the past by losing their population through migration are now suffering less, while others who have depended on migration inflows, such as suburbs and townships, are not seeing as much growth.

Earlier this year the Census Bureau reported that New Jersey's largest city, Newark, has experienced a 2.4 percent growth in population, its first positive population growth in over 60 years. This was part of a substantial list of U.S. cities that have recently seen resurgence in population after decades of stagnation and decline. In 2007 and 2008 New Jersey urban centers – Atlantic City, Camden, Elizabeth, Jersey City, New Brunswick, Newark, Paterson, and Trenton – had a combined population growth rate of .34 percent (Future Facts, 2009). This is surprising given that the rate of growth in New Jersey cities was five times less than the rest of New Jersey for the first seven years of the decade. IN this paper,, we seek to investigate whether use of smart growth principles can account for the reversal of fortune that New Jersey cities have experienced.

II. Background

Over the past few decades, Americans have witnessed the decline of cities coupled with the simultaneous growth of suburbs. This event has led many to ask questions about the relationship between the two: Are cities and suburban economies interdependent? To what extent are there positive externalities associated with city growth? Summers (1990) has found that city and suburban population growth was positively correlated throughout the 1970's and 1980's. Summers and Linneman (1990) find a positively correlated relationship between city and suburban employment growth. Leichenko (2001) suggests that both city and suburban growth are positively correlated because they share common factors such as state policy and labor market dynamics. Voith (1998) finds that there is considerable evidence that city and suburban economies are interdependent in the sense that long-run changes in employment and population growth in cities and suburbs tend to be correlated. Consequently, suburbs of cities in decline suffer slower growth rates, which in turn results in lower employment and population growth, while suburbs of growing cities benefit from higher employment and a growing population. It should be noted that growth in population and employment are usually caused by growth in overall income.

Voith (1998) notes that there are two major problems in constructing a model of the relationship between population growth and employment for cities and suburbs. The first is the simultaneous correlation between key economic factors for both cites and suburbs. In addition, cities can affect suburbs while at the same time suburbs can affect cities. There seem to be very few factors that are exclusive to either suburban economies or city economies. The second problem is unobserved common factors that affect both cities and suburbs. These factors may show correlation between the two even if there is no causal relationship. Numerous studies (Mills 1986, Carlino and Mills 1987, Clarck and Murphy 1996, Mulligan et al. 1997, among others) show that population growth and employment growth in cities and nearby regions tends to be jointly determined. The basis of joint determination is that firms and households are both mobile (Steinees and Fisher, 1974). Firms make location decisions to maximize profit while households make location decisions to maximize utility. Firms will choose a location based on its access to open consumer markets, business climate, and many other factors. Households will locate based on job opportunities as well as social and public factors (Leichenko, 2001). Cities that possess attractive characteristics to firms and households will draw higher populations. This may occur because the city attracts households (consumer markets), which attract businesses or because a city attracts businesses (job opportunities), which in turn attract more households. This simultaneity makes the exploration of variables that attract households and firms a necessity.

Leichenko (2001) argues that there are many factors, both from the supply side and the demand side of economics that determine city growth. The demand side is concerned with a region's exports. Vibrant local and foreign markets for an area's products will result in consistent or rapid growth for that region. The supply side can be broken down into two determinants of growth. The first is endowments of the particular region such as human and physical capital, infrastructure, schools and universities. The second group of determinants is locational factors such as labor costs, unionization, taxes, and fiscal conditions, which make areas attractive to both firms and households (Leichenko, 2001). Both demand and supply side factors will be further explained later in this paper.

On a theoretical level, population growth in particular areas is usually the product of two things: an increase in fertility rates, that is a higher birth rate than death rate, or an increase in migration, whether it is on the international, state, or municipal level. The average fertility rate in New Jersey is slightly over replacement level, making additional population growth in urban areas that results from fertility negligible. Therefore, in this case, most changes in population growth are a result of migration into cities and out of suburbs. Neoclassical migration models explain that individuals will migrate to areas where they will receive a higher utility in terms of wages, income, and quality of life than if they did not migrate.

Since most variation in growth rates among cities are due to migration (Cadwallader, 1991), it is necessary to examine what factors contribute to migration between declining and growing areas. As previously mentioned, neoclassical equilibrium suggests that migration is characterized by income differentials; therefore, labor will tend to migrate from low to high-income areas. Living cost is a main determinant of migration patterns. Evidence suggests that the cost of living in urban areas is a decreasing function of population size and an increasing function of population density and income levels (Cadwallader, 1991). Employment opportunities are also an important factor related to migration. In-migration is theoretically inversely related to unemployment, and most empirical evidence verifies this theory. Individuals in search of higher income may not only be in search of job opportunities but also in search of the best government transfers. Generous local policies such as welfare benefits or unemployment compensation should lead to a greater in-migration of lower income individuals and families (Pack, 1975). Migration can also be influenced by government expenditure on services such as education. There is also a quality of life variable, which reflects smaller underlying components such as climate, natural recreation amenities, social amenities, crime, air pollution, health, etc. (Cadwallarder, 1991). It is not unheard of for individuals and families to tradeoff income for quality of life, therefore, it must be considered. The factors mentioned above along with other variables such as demographics, human capital, inequality, population density, industrial structure, business and fiscal climate, and amenities are often key determinants of city growth. Our design controls for these factors by using a fixed effects regression procedure and analyzing population growth rather than population levels. We expect that the controls are effective because demographics, human capital, inequality, population density, industrial structure, business and fiscal climate do not change much over time.

While past relationships between cities and suburbs have been clearly established, it does not lead us towards any conclusion about the effectiveness of smart growth principles in reversing the fate of New Jersey cities: There has been a lack of recent literature examining the effectiveness of policies designed to revive urban centers. To explore these phenomena further we will examine whether price elasticity of supply of building permits in surrounding municipalities affect population growth in 11 major New Jersey urban areas, (Atlantic City, Camden, Clifton, Edison, Elizabeth, Jersey City, Newark, Passaic, Paterson, Toms River, and Trenton).

III. New Jersey Smart Growth

In recent years the Office of Smart Growth worked closely with the State Planning Commission in developing the New Jersey State Development and Redevelopment Plan. This plan describes a vision for the future of New Jersey that involves protection of the environment and a guide for future growth into compact and mixed-use development and redevelopment areas. The goals set forth by this plan aim to achieve comprehensive, long-term planning; and integrate that planning with programmatic and regulatory land-use decisions (Department of Community Affairs, 2010). Generally, the focus of the Smart Growth mission is to “conserve natural resources, revitalize urban centers, protect the quality of its environment, and provide needed housing and adequate public service,” (NJ State and Redevelopment Plan, 2001) while still allowing beneficial economic growth in the state.

The Office of Smart Growth aims to accomplish both goals of economic growth and conservation by imposing land use regulations while trying to discourage the construction of new commercial and housing projects on undeveloped land. This strategy will encourage the residents of municipalities that border major urban areas or cities to migrate from neighboring suburbs to large urban areas, due to the lack of new housing being constructed. As individuals begin to migrate from neighboring municipalities to major urban areas in New Jersey we expect to see a revival of older urban areas in terms of the population, employment, and the overall economy, which in effect accomplishes Smart Growths goals.

IV. Formulation of the Model and Data Collection

From the strategy mentioned above, we may infer that the population of a large urban area in New Jersey that neighbors municipalities where there is a small or declining amount of housing permits being awarded should generally see more growth. However, this relationship has not been tested econometrically and the reasons offered for recent growth in New Jersey urban areas have been speculative. To develop evidence to prove or disprove the causes for changes in population a model relating population growth, housing prices, and housing permits has been developed to attempt to shed light on the relationship. The model will be:

$$\text{Pop Growth}_{it} = \alpha_i + \beta_i \text{SupplyElast}_{it} + \text{Year}_t + \varepsilon_{it}$$

Initially data was collected to identify each municipality that was within 5 border-to-border miles of each of the 11 urban areas. After the municipalities were identified the number of housing permits for the years 2000 to 2008 were used to develop one part of the elasticity of supply for housing permits (Department of Labor and Workforce Development, 2009). To develop the data for per-year house price for municipalities surrounding each urban center, the 2000 U.S. Census was used to weight the average house price by each municipality's population for each city (2000 Census of the Population, 2003). Once each municipality was weighted they were averaged for each year and used to develop supply elasticities for each urban center neighboring municipalities for the year 2000 to 2008. Also the population data was used to develop trends in growth in population on both a per year basis across all cities and on a per city basis from 2000 to 2008.

By using supply elasticities for housing permits and correlating it with population growth and the year of each urban center we may test whether any population growth was due to a reduction in housing permits. There are two situations in which negative supply elasticities reveal population growth and two situations which positive supply elasticities would reveal population growth. These negative supply elasticities, that reveal population growth, would indicate one of two possible situations. The first being a rise in the amount of permits and a decline house price and the second being a decline in the amount of permits coupled with an increase in housing prices. Positive supply elasticities are observed when there is an increase in permits and increase in prices or a decrease in permits coupled with a decrease in prices, would reveal population growth in urban centers.

Exhibit 1:

Situation 1: ↑ permits & ↑ price → positive supply elasticity
Situation 2: ↑ permits & ↓ price → negative supply elasticity
Situation 3: ↓ permits & ↓ price → positive supply elasticity
Situation 4: ↓ permits & ↑ price → negative supply elasticity

However the significance of each of these four possible outcomes will be discussed in the results section of this paper.

V. Results

Before trying to examine the effect of supply elasticity of building permits in the suburbs on population growth in the cities, it is necessary to understand of the basic trends in population growth for the 11 urban centers in New Jersey for the years 2001 to 2008 (2000 was dropped due to the development of the data set). Table 1 gives a basic description of the growth in population per year for all 11 cities in the data set. It shows that there was aggregate growth in all cities from the years 2001 to 2003 with the most growth occurring in the year 2001, growth of about 0.26%, followed by a steady decline in growth until 2004 when the population began to decline. The total decline in population for all 11 urban centers reached a low in 2006 at about -0.27%. The year 2008 ended the trend on decline with positive growth of about 0.02%. Table 2 shows the basic trend of population growth for each urban center from the year 2000 to 2008. Of the 11 urban centers in the data set, 6 of them had negative population growth and only Elizabeth, Jersey City, Newark, Edison, and Tom's River had growth in their population over the entire time period. Trenton has the largest decline in population, about 0.37%, while Tom's River had the largest growth of about 0.79% in population.

Tables 3 and 4 show fixed effects regression results for percentage change in growth in the urban center. The key independent variable in these regressions is the supply elasticity of housing in municipalities that surround the urban center. The question we are trying to answer is how does supply of housing permits and average house price in surrounding municipalities affect population growth in the urban center. Column (1) in Table 3 reports a regression that includes all observations for each urban center and year regardless of weather the price of the homes is growing or declining or the supply of housing permits is growing or declining. The results show that no variables are significant when all observations are included. This is because, as Exhibit 1 above indicates, a positive supply elasticity has different implications depending on whether house prices are rising or falling.

Of course, the same is also true for negative supply elasticities. In this connection, it is important to note that rising house prices may cause increases in permits as builders seek to meet the rising demand. On the other hand, municipal officials may respond to higher house prices by cutting the number of permits or cuts in the number of building permits issued may cause an increase in house price. It is this second scenario that is of greatest interest to us. That is, it should come as no surprise that in a fast growing area, house price and permit increases in the suburbs might be associated with population growth in the city. However, the more interesting case is whether in slow growing areas we can raise prices in the suburbs by cutting the number of permits and force growth into the city. (Alternatively, can municipal officials in the suburbs cut permits and force growth into the city.) Column (2) of Table 3 reports results for a regression that includes only observations where the suburbs for a particular city show positive growth in house prices. The results here show that the both the constant and the year in significant at a 0.05 level. More importantly, supply elasticity is not significant. Column (3) tests the opposite effect, all observations for which suburban house prices are declining. This specification yields no significant results, although it is not conclusive due to the relatively small sample size.

In column (1) of Table 4, we test whether decreasing the supply of permits (in period t) in the suburbs leads when suburban house prices are increasing raises population growth in the city center. to increase price for housing in local municipalities and force migration from neighboring suburbs to urban centers. The estimate here suggests that a 1 percentage point reduction in the number of permits issued coupled with a 1 percentage point increase in house price in the suburbs causes population in the city to rise by 0.014 percentage points. However, this estimate just misses the standard threshold for statistical significance (p = 0.11). In column 2 of Table 4 we examine the case of rising average home price and an increased supply of housing permits. Although in the suburbs it may seem that an increased amount of permits it local suburbs will lead to population growth in the suburbs and not in urban centers the data tells a different story. The simultaneous growth in both the suburbs and urban centers and be accounted for because cities and neighboring municipalities seem to grow together. The estimate here suggests that a 1 percentage point increase in house price in the suburbs and a 1 percentage point increase in permits issued in the suburbs causes a 0.1 percentage point increase in city population (p = 0.06).

Table 5 shows a fixed effect regression when the change in house price is lagged one year. The regression reported in column (1) includes only observations where the percent change in house price in period t-1 is positive. The supply elasticity estimate in this case is significant at the 0.001 level and it indicates that when house prices are rising in suburbs in period t-1, higher supply elasticities of permits in suburbs lead to higher population growth in the central cities in period t. In this case a 1 percent increase in the amount of housing permits would result in a population increase of about .04 percentage points. Column (2) in Table 5 includes only observations where the percent change in house price in period t-1 is positive and the percentage change in housing permits in period t is negative. Thus, this regression examines the case in which municipal officials in the suburbs respond to rising house prices by cutting the number of housing permits issued. In this case supply elasticity is significant at the 0.001 level and a 1 percent increase in the change in house price coupled with a 1 percent decrease in the number of housing permits will result in a 0.03 percentage point increase in population. Finally, column (3) in Table 5 includes only observations where the percent change in house price in period t-1 is positive and the percentage change in housing permits in period t is positive. Thus, this regression examines the case in which municipal officials in the suburbs respond to rising house prices by increasing the number of housing permits issued. In this case, the estimate for supply elasticity is statistically insignificant.

Taken together, the regression results suggest a contemporaneous effect and a lagged effect. For the contemporaneous effect, we find that rising suburban house prices in period t and rising levels of suburban permits in period t are correlated with rising population in the urban center for period t. These results suggest the simultaneous growth of both cities and their surrounding municipalities. The lagged effect is that rising suburban house prices in period t-1 and falling suburban permit levels in period t cause faster population growth in the urban center for period t. Thus, when suburban municipal officials react to higher house prices by cutting the number of permits they issue, growth in the city increases. If suburban officials react to the higher house prices by increasing the number of permits, we see no effect on population growth in the city.

VI. Conclusion

This paper suggests that smart growth principles have some validity. In particular, we find that we may increase population growth in urban centers by cutting the number of building permits issued in the suburbs. Our results show that population growth in cities is associated with a contemporaneous effect and a lagged effect. Although rising house prices are a common factor in both instances of population growth in urban centers, the causal factors differ. For the contemporaneous effect, we find that rising suburban house prices in period t and rising levels of suburban permits in period t are correlated with rising population in the urban center for period t. These results suggest the simultaneous growth of both cities and their surrounding municipalities.

The lagged effect is that rising suburban house prices in period t-1 and falling suburban permit levels in period t cause faster population growth in the urban center for period t. Thus, when suburban municipal officials react to higher house prices by cutting the number of permits they issue, growth in the city increases. In this case, population growth in urban centers is the result of the lack of new housing being built and the increased cost of owning a home in the suburbs. Thus, state officials can use the tactic of cutting the number of building permits in suburban municipalities to accomplish their goals of urban revitalization, economic growth, and environmental sustainability.

Table 1. Growth in population per year across all cities

Variable	Year	Obs	Mean	Std. Dev.
GR_pop	2001	11	0.0026316	0.0056958
GR_pop	2002	11	0.0017808	0.0065596
GR_pop	2003	11	0.0007247	0.0043382
GR_pop	2004	11	-0.0013563	0.0040122
GR_pop	2005	11	-0.0011640	0.0048872
GR_pop	2006	11	-0.0027492	0.0057729
GR_pop	2007	11	-0.0006408	0.0035402
GR_pop	2008	11	0.0026427	0.0036572

GR_pop = (population[n] – population[n-1]) / (population[n-1])

Table 2. Growth in population for each city from 2000 to 2008

Variable	City	Obs	Mean	Std. Dev.
GR_pop	Camden	8	-0.0006017	0.0031941
GR_pop	Elizabeth	8	0.004018	0.0029299
GR_pop	Jersey City	8	0.0005624	0.004765
GR_pop	Newark	8	0.002818	0.0018398
GR_pop	Paterson	8	-0.0031014	0.0035145
GR_pop	Trenton	8	-0.0037153	0.0047576
GR_pop	Atlantic City	8	-0.0032131	0.0039508
GR_pop	Clifton	8	-0.001367	0.0021964
GR_pop	Edison	8	0.0010529	0.0062129
GR_pop	Passaic	8	-0.0018735	0.002937
GR_pop	Toms River	8	0.0079914	0.0051812

GR_pop = (population[n] – population[n-1]) / (population[n-1])

Table 3. Fixed-effects regression results for population growth in NJ cities

	(1)	(2)	(3)
Variable	All obs.	If PCH_CH_Hprice >0	If PCH_CH_Hprice <0
Constant	0.527167	1.486825*	-2.934996
	(0.4594384)	(0.6749088)	(5.185451)
SUPP_ELAST (a)	-0.00000546	-0.0000814	-0.0000446
	(0.0000396)	(0.0000722)	(0.0000373)
Year	-0.0002629	-0.0007421*	0.001463
	(0.0002292)	(0.0003368)	(0.0025825)
	n = 88	n = 74	n = 14
	R^2 = .0133	R^2 = .0826	R^2 = .0944
	CS = 11	CS = 11	CS = 11
	F = 1.04	F = 3.88	F = 136.01
	Pr > F = .3885	Pr > F = .0567	Pr > F = 0.000

Dependent variable (Y): Change in population per year
GR_pop = (population[n] – population[n-1]) / (population[n-1])
t- stats: *** significant at .01, ** = significant at .05, * = significant at .10
Standard errors in parentheses
a Supply Elasticity = (percent change in permits) / (percent change in house price)
a_1 Percent change in permits = (permits[n] – permits[n-1]) / ((permits[n-1] + permits[n]) / 2)
a_2 Percent change in House price = (weighted house price[n] – weighted house price[n-1]) / ((weighted house price[n-1] + weighted house price[n]) / 2)
Year = 2000 - 2008

Table 4. Fixed-effects regression results for population growth in NJ cities

	(1)	(2)
Variable	If SUPP_ELAST <0 & PCT_CH_Hprice >0	If SUPP_ELAST >0 & PCT_CH_Hprice >0
Constant	1.72937**	1.813887*
	(0.6575438)	(0.8848319)
SUPP_ELAST (a)	-0.0001376	0.0010316*
	(0.0000786)	(0.0004827)
Year	-0.0008632	-0.0009061*
	(0.0003281)**	(0.0004417)
	n = 40	n = 34
	R^2 = 0.0711	R^2 = 0.1354
	CS = 11	CS = 11
	F = 5.26	F = 3.12
	Pr > F = 0.0275	Pr > F = 0.0886

Dependent variable (Y): Change in population per year
GR_pop = (population[n] – population[n-1]) / (population[n-1])
t- stats: *** significant at .01, ** = significant at .05, * = significant at .10
Standard errors in parentheses
a Supply Elasticity = (percent change in permits) / (percent change in house price)
a_1 Percent change in permits = (permits[n] – permits[n-1]) / ((permits[n-1] + permits[n]) / 2)
a_2 Percent change in House price = (weighted house price[n] – weighted house price[n-1]) / ((weighted house price[n-1] + weighted house price[n]) / 2)
Year = 2000 - 2008

Table 5. Fixed-effects regression results for population growth in NJ cities lagged one year

	(1)	(2)	(3)
Variable	pct_ch_hprice_lag >0	SUPP_ELAST_1 <0 & pct_ch_hprice_lag >0	SUPP_ELAST_1 >0 & pct_ch_hprice_lag >0
Constant	0.9515134	1.63815	1.571438
	(0.83569)	(0.904244)	(1.023434)
SUPP_ELAST (a)	-0.0002357***	-0.0003712***	0.0010086
	(0.000073)	(0.0000759)	(0.0006091)
Year	-0.0004749	-0.0008175	-0.0007852
	(0.0004169)	(0.000451)	(0.0005107)
	n = 73	n = 42	n = 31
	R^2 = 0.0306	R^2 = 0.0321	R^2 = 0.1089
	CS = 11	CS = 11	CS = 11
	F = 6.38	F = 20.03	F = 2.72
	Pr > F =0.0164	Pr > F = 0.0003	Pr > F = 0.1141

Dependent variable (Y): Change in population per year
GR_pop = (population[n] – population[n-1]) / (population[n-1])
t- stats: *** significant at .01, ** = significant at .05, * = significant at .10
Standard errors in parentheses
a Supply Elasticity = (percent change in permits) / (percent change in house price)
a_1 Percent change in permits = (permits[n] – permits[n-1]) / ((permits[n-1] + permits[n]) / 2)
a_2 Percent change in House price = (weighted house price[n] – weighted house price[n-1]) / ((weighted house price[n-1] + weighted house price[n]) / 2)
Year = 2000 - 2008

Works Cited

Cadwallader, Martin. "Metropolitan Growth and Decline in the United States: an Empirical Analysis." *Growth and Change* 22.3 (1991): 1-16. Print.

Carlino, G. A., and E. S. Mills. "The Determinants of County Growth." *Journal of Regional Science* 27 (1987): 39-54. Print.

Department of Community Affairs. *Office of Smart Growth*. Web. 8 May 2010. <www.nj.gov>.

Leichenko, Robin M. "Growth and Change in U.S. Cities and Suburbs." *Growth and Change* Summer 32.3 (2001): 326-54. Print.

Mallach, Alan, Amanda Frazier, Diane Sterner, and James A. Johnson Fellow. *Cities in Transition: New Jersey's Urban Paradox*. Rep. Trenton: Housing and Community Development Network of New Jersey, 2006. Print.

Mills, E. S. "Metropolitan Central City Populationa nd Employment Growth During the 1970's." *Prices, Competition and Equilibrium* (1986). Print.

Mulligan, G. F., Alexander C. Vias, and Sonya M. Glavac. "Initial Diagnostics of a regional Adjustment Model." *Disccusion Paper, Deapartment of Geology and Reginal Develoment, University of Arizona* (1997). Print.

Nasser, Haya El, and Paul Overberg. "Population Numbers Bounce Back in Cities." *USAToday*. 1 July 2009. Web. 15 Sept. 2009. <USATODAY.com>.

New Jersey. Department of Community Affairs. Office of Smart Growth. *New Jersey State Development and Redevelopment Plan*. Trenton: New Jersey State Planning Commision, 2009. Print.

NJfuture.org. "Cities Show Signs of Reversing Trend, Gaining Population in the Past Year." *New Jersey Future Facts* (15 July 2009). Print.

Pack, Janet R. "Determinants of Migration to Central Cities." *Journal of Regional Science* 15.2 (1975). Print.

Steinees, D., and W. Fisher. "An Econometric Model of Intraurban Location." *Journal of Regional Science* 14 (1974): 65-80. Print.

Summers, Anita A., and Pere D. Linneman. 1990. ""Patterns and Process of Urban Employment Decentralization in the U.S, 1976-1986." *Working Paper, Whatton Real Estate CEnter, Universtiy of Pennsylvania*. Print.

The State of New Jersey. "Department of Labor and Workforce Development." *Monthy Residential Building Permits*. 2010. Web. 8 Jan. 2010. <http://lwd.dol.state.nj.us/labor/lpa/industry/bp/bp2000_index.html>.

U.S. Census Bureau. *2000 Census of Population.* Washington, DC: U.S. Dept. of Commerce, Economics and Statistics Administration, U.S. Census Bureau, 2003. Print.

Voith, Richard. "Do Suburbs Need Cities?" *Journal of Regional Science* 38.3 (1998): 445-64. Print.