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ABSTRACT[1]

Some cities are successful, attracting businesses and residents, while others struggle unsuccessfully with declining industries and diminishing population. In this paper, we identify cities that over- or under-performed on certain indicators of well-being during the period from 1990 to 2000, compared to their predicted performance according to models we developed. Selecting certain states and their cities, we conducted case studies to examine why a city did particularly well (or poorly) compared to our prediction with respect to the income, population, or housing affordability indicators and what the role of state policy was, if any, in the city's deviation from expected performance. We then discuss initial findings for a subset of the cities and indicators. The empirical results indicate that state policy can impact city performance, but it is only one of many factors and its influence may be quite small at times.

When one thinks of successful cities, certain cities come to mind, such as Austin, Charlotte, San Francisco, and Seattle. Other cities are considered by many to be distressed, with Cleveland, Detroit, and Pittsburgh among them. Why do some cities outperform others; why do some continue to struggle? While many factors play a role, we were interested in determining what role, if any, state policy plays in the well-being of cities.

States play an integral role with respect to cities through a wide range of activities and policies. These span from the determination of government structure and fiscal environment to decisions about transportation, education, welfare, and economic development. States may be unaware of the significant effect their actions have on their cities, especially since most have no explicit "urban" policy. However, they are quite cognizant if one of their cities is draining resources from the entire state or attracting assets and residents to drive growth in the state.

We define "state policy" to mean state activities or structures that can be altered by the state legislature, by administrative action or rule making by the executive branch, or by the state's voters. These actions would include state programs, including state fiscal aid to cities; successful ballot initiatives; regulations; incentives, subsidies, taxes and other revenue raising devices; and institutions and structures, including both legislative and constitutional provisions affecting local powers and the ability of city governments to exercise local autonomy.

Though crucial to the well-being of cities, state policy is only one component. Among the many other factors influencing city performance are the city's own policies, history and culture, local leadership both public and private, local entrepreneurship, and other factors idiosyncratic to the urban area.

This study was designed to explore the role of state policies in promoting or hindering urban performance through case studies of states in which cities did significantly better or worse than expected between 1990 and 2000 on a series of economic and social indicators. We

[1] We thank the Fannie Mae Foundation for funding this research.

identified seven states in which cities performed better or worse than predicted by a series of regression models, and then selected cities with similar performance on the significant indicators in each of the seven states. We then conducted a series of case studies, involving interviewing state and city government officials, other policy makers, and close observers such as lobbyists, academics, and newspaper reporters, convening expert panels, and reviewing documents. In the process, we developed and tested hypotheses as to why the city had performed other than as predicted and what role the state seemed to have played.

Our research team presented a paper at last year's Urban Affairs Association Conference describing the methodology by which the states and cities for the case study were selected.[2] This paper briefly summarizes the methodology, describes revisions to the methodology since that paper was presented, and then offers hypotheses as to why cities performed better or worse than the predictive model and the potential role of state policy in that performance.

Methods and Results

The goal of the research project was to account for the divergence of city performance from the predicted values generated by our model and, in particular, what role state policy played. The first stage of research involved statistical analysis to determine how much of the variation in cities' performance on a variety of indicators between 1990 and 2000 could, potentially, be attributed to state policies.

The population of cities included all central cities with populations of more than 50,000 in 1990 (n=325).[3] Data were collected on 27 indicators of the economic and social well-being of city residents, including measures of income, educational attainment, crime rates, housing costs, racial and economic segregation, and employment. (See Table 1.) Since the focus was on change in city performance as a result of state policy or action, change from 1990 to 2000 was used for each indicator.

Factor Analysis

Factor analysis was used to determine how the indicators vary in relation to one another and to generate categories (factors) for evaluating city performance. The indicators are highly related to one another within categories, but the categories themselves are both statistically and intuitively distinct from one another. The factor analysis condensed the indicators of city and residential well-being into categories representing broad areas of performance. Three factors, Income and Education, Population and Employment, and Housing Affordability were retained, with eigenvalues ranging from 5.66 to 2.67. (See Table 2 for the variables within each factor.)

The three factors cumulatively explained more than 68% of the total variance. New variables representing city performance in each of the three categories were created by using the factor scores for each factor.

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[2] Furdell, Kimberly, Hal Wolman, Edward W. Hill, and Elaine Weiss (2005). State Policy Effects on Urban Performance. Presented at the 2005 annual meeting of the Urban Affairs Association in Salt Lake City, Utah April 16, 2005.

[3] Every state except Vermont had at least one central city of this size.

Predicting the Factor Scores

We used linear regression models to estimate how much of the variation in the categories of urban performance could (at least potentially) be attributed to public policy. We included a set of variables measuring the economic and demographic structure of the city at the beginning of the period (1990) and other change variables between 1990 and 2000 that might have affected the factor (the dependent variable) but were not related, at least directly, to public policy. (See Table 3 for the independent variables used in the regression models.) Because this was a predictive model, rather than a causal one, multicollinearity among variables was not a concern. City characteristics at the beginning of the study period were controlled for by including measures of these characteristics in 1990 in addition to the change from 1990 to 2000. Controls also were included for cities' climate (average July temperature), status as a state capital, and geographic region. This set of non-policy variables was used to explain as much of the variation in the factor scores as possible. Explicit policy variables at either the city or state level were excluded to isolate the effects of non-policy variables. While some of the variables, such as concentration of the labor force in manufacturing or poverty rate, may be indirectly affected by state policy, variables were selected to maximize the non-policy elements. Thus, for example, amenities (qualities such as parks, cultural institutions, and pedestrian accessibility that make a city desirable) was not included as a variable since it likely reflects policy choices.

The three predictive models explain a significant amount of the variance in the factor scores. The models explained 66 percent of the variance Income and Education factor scores, 56 percent of the Population and Employment factor, and 27 percent of the Housing Affordability factor. The remaining, or unexplained, portion of the variation was the maximum portion that might be attributed to policy at the national, state, or city levels. Some or all of the unexplained variation, of course, might be attributed to non-policy factors that had not been included in the model (omitted variables).

State Fixed-Effects Models

State fixed-effects models were then used to distinguish state-level policy effects from national or city-level policies. The residuals from the three predictive models were regressed against a set of state dummy variables. Only cities that were in states with at least three central cities in our set were included, resulting in 34 states[4] and 303 cities. Each set of residuals was used as the dependent variable in a linear regression with the 34 state dummy variables as independent variables. The state dummy variables with significant coefficients were those in which state-level factors could have played a significant role in the performance of their cities between 1990 and 2000. Using a statistical significance threshold of 0.1, the state dummy coefficients were significant for the factors indicated as follows.

- Income and Education Factor
  - Good performers: Colorado, Illinois, Oregon, Washington
  - Poor performers: California, Michigan, Pennsylvania

[4] The states that are not included because they had too few central cities are: Alaska, Delaware, District of Columbia, Hawaii, Idaho, Maine, Maryland, Mississippi, Montana, Nebraska, Nevada, New Hampshire, North Dakota, South Dakota, West Virginia, and Wyoming.

- Population and Employment Factor
  - Good performers: Illinois, North Carolina, Oregon
  - Poor performers: Pennsylvania, Virginia
- Housing Affordability Factor[5]
  - Good performers: California, Kansas, Louisiana, Michigan, Wisconsin
  - Poor performers: Alabama, New Mexico, North Carolina, Pennsylvania, Washington

Selection of Case Studies

Based on the results of the statistical analyses, we selected seven states that had significant coefficients on at least two of the three models. These states were as follows, with "+" indicating better than expected performance and "-" indicating worse than expected performance:

- California: Housing Affordability (+); Income and Education (-);
- Illinois: Income and Education (+); Population and Employment (+);
- Michigan: Income and Education (-); Housing Affordability (+);
- North Carolina: Population and Employment (+); Housing Affordability(-);
- Oregon: Income and Education (+); Population and Employment (+);
- Pennsylvania: Income and Education (-); Population and Employment (-); Housing Affordability (-); and
- Washington: Housing Affordability (-); Income and Education (+).

After choosing the case study states based on the linear regressions of the factor scores, we again used linear regression to examine whether our seven states would show the same significant effects on the key indicators within each factor. In this set of regression models, we used the following indicators as dependent variables, based on the strength of their relationship with the underlying factor in the factor groupings:

- From the Income and Education Factor:
  - Median Household Income
  - Per Capita Income
  - Poverty Rate
- From the Population and Job Growth Factor:
  - Population
  - Jobs by Place of Residence
- From the Housing Affordability Factor:
  - Housing Affordability at the 30% Level
  - Housing Affordability at the 50% Level

[5] The interpretation of the Housing Affordability Factor can be controversial. While a lack of affordable housing can be bad for city residents, it is often a sign of a vibrant competitive city. For our purposes, however, because the ability to afford housing is an important aspect of the well-being of city residents, we treated a decrease in the availability of affordable housing as an indicator of poor city performance.

The explanatory variables in the models were the same as the independent variables used in the Factor Score models (See Table 3). Repeating the same process we used previously, we again employed state fixed-effects models to explain the residuals from the indicator models, with state dummy variables as the independent variables. We found that our case study states were significant for the following indicators:

- California: Housing Affordability at 30% (+); Poverty Rate (-);
- Illinois: Median Household Income, Population, Jobs by Place of Residence (+); Housing Affordability at 50% (-);
- Michigan: Per Capita Income (-); Housing Affordability at 50% (+);
- North Carolina: Median Household Income, Population, Jobs by Place of Residence (+);
- Oregon: Median Household Income, Per Capita Income, Poverty Rate, Jobs by Place of Residence (+); Housing Affordability at 30% (-);
- Pennsylvania: Median Household Income, Per Capita Income, Poverty Rate, Population, Jobs by Place of Residence, Housing Affordability at 30% and 50% (-); and
- Washington: Housing Affordability at 30% (-); Poverty Rate (+).

An examination of the significant factors and their indicators for each state led to the selection of two cities in each state (other than Oregon for which only one city was selected) in which performance on the relevant indicators matched the average performance of the state's cities overall. For example, Washington performed better than expected on poverty and worse than expected on housing affordability, so two cities were selected that also did well on poverty and poorly on housing affordability (Seattle and Tacoma). The case study cities are: Sacramento and San Francisco, CA; Aurora and Chicago, IL; Grand Rapids and Lansing, MI; Charlotte and Durham, NC; Portland, OR; Philadelphia and Pittsburgh, PA; and Seattle and Tacoma, WA. It is important to note that cities were selected because they over- or under-performed **in comparison to the predicted value** on an indicator using the model. Thus, for example, California and its cities did better than expected on housing affordability not because housing is affordable in California, but because it was more affordable (or less unaffordable) than predicted.

To explain the performance of cities in our case study states as measured by the factor scores, we had to examine city performance on those indicators that were most highly related to each factor. So while the states were selected based on their factor scores, the selection of cities within those states was based on the individual performance indicators, and we focused on the indicators rather than the factors during the case study interviews.

Revisiting the Indicator Regressions

Two rounds of interviews were conducted in each state with state and city policymakers and close observers such as journalists, academics, and other informed observers. In addition, at least one expert discussion panel was convened in each state. During the first round of interviews and panels, several variables were suggested that were not directly related to policy and might explain a portion of the residuals. For example, in our discussions it was suggested

that the model should measure in-migration as well as population change. Another factor that was mentioned was the relationship of the MSA-wide economy to a city's economy.

We wanted to take some of these additional variables into account, but without revisiting the selection process since the first round of interviews had already been completed. Therefore, prior to the second round of interviews, the linear regression models used to predict performance on the indicators were revised to include additional non-policy variables that could account for the remaining variance. Some of the omitted variables that were recommended, such as greater industry detail, were not included because of resource limitations. Others, such as amenities, continued to be excluded because they could reflect policy decisions.

Again using the set of seven key performance indicators that best defined the three factors, new regressions were conducted with several added variables. Each of the regressions included the following new variables: change in gross metropolitan product (GMP) per job, natural log of 1990 GMP, and percent with college degree in 1990. Regressions on each indicator also included additional variables. For example, in analyzing change in population, the variables change in employment rate, change in percent of foreign-born, change in percent of non-English speaking, percent in-migrants from 1995-2000, and the natural log of the 1990 population were added. (See Table 4 for the variables used for each of these predictive regression models.) As with the original analysis, the models were predictive and not structural, allowing us to discount the obvious problems of multicollinearity in the interest of maximizing the models' predictive ability. The r-squared values for the regressions improved for each indicator, with the initial range of 0.263 to 0.578 improving to a range of 0.476 to 0.664.

The new regressions allowed us to determine whether the indicators of interest were still those on which the cities performed significantly better or worse than expected. The results were essentially the same. While relative performance changed for some of the cities, most of them could still be considered over- and under-performers on the indicators identified initially. The revised regressions allowed us to continue to conduct interviews and expert panels to develop hypotheses for the findings and collect data, having further reduced the omitted non-policy variables that could account for the residuals.

Case Studies

The quantitative analysis described above resulted in the selection of states and cities that performed better or worse than predicted by the models. (See Table 5 for the cities' actual and predicted values on the indicators and their rankings, which reflect the difference between the city's actual and predicted values on an indicator compared to the difference for the other cities in the sample.) The model explained the performance of some cities very well and other cities less well, because the model does not incorporate all of the factors that might affect city performance. It deliberately does not include the effects of state (or city) public policies. There are other possible explanations for city over- or under-performance as well. Individual cities are subject to idiosyncrasies. Other factors may be relevant but data collection or modeling is too difficult. For example, a city (or the state) may specialize in products or sectors that grew particularly rapidly at the national level over the decade of the 1990s. To identify state policies that harm or hinder city well-being requires looking at individual cities in-depth to learn about

the contributions of all of these possibilities. Since the goal of the research was to explain performance during the 1990 to 2000 period, the focus was on policy that was in effect and was likely to have an impact during that period rather than more recently implemented policies.

While many cities (and clusters of cities within states) did particularly well or poorly on multiple measures of well-being, in this paper we discuss three of the major descriptors of city well-being that we measured – income growth, population growth, and housing affordability. These indicators are intimately related. We focus here on a subset of cities that reflect unique combinations of state and city policy, individual city experiences, and other factors that, together, produced different changes in levels of well-being as measured by the three indicators. In each case, the questions we seek to answer are: why did this city do particularly well (or poorly) compared to our prediction with respect to that indicator and what was the role of state policy, if any, in the city's deviation from expected performance? We used the interviews, panels, and document review as we developed and tested hypotheses that include both policy and non-policy possibilities.

We begin with cities that did unusually well or poorly with respect to income.

Income

Aurora

We visited Aurora because, even more than Chicago, its income (and job and population) growth far exceeded the levels predicted by our model. While our model predicted that per capita income would be around $19,000, Aurora's exceeded $22,000, making it the fastest-growing of all our 325 cities in this respect.

Hypotheses: Three key hypotheses provide explanations for this unusual increase in income in the 1990s: selective in-migration of higher-income people into Aurora; selective out-migration of lower-income people from the city; or increased incomes for people who lived in the city in both 1990 and 2000.

HI: Selective in-migration of high-income households resulted in increased income. Substantive evidence indicates that the in-migration of high-income people was in large part responsible for Aurora's incredible income growth. In-migration clearly occurred, as Aurora's population grew from 99,581 in 1990 to 142,990 in 2000[6]. The percent of Aurora households in the highest national quintile income bracket increased from 21% in 1990 to 29% in 2000. In those same years, the percentage of residents with a college degree or more increased substantially (from 19% to 30%), while in the nation as a whole, it increased from 21% to 26%. Aurora went from below average in terms of its college-educated residents to substantially above average. These data suggest an influx of highly educated, upper-middle income residents. The interviews were designed to explore the possible role of state policy underlying these statistics. We were told repeatedly how the vision of city leaders combined with cooperative state actions to make Aurora a desirable place to live.

[6] State of the Cities Data Sets (SOCDS), 1990 and 2000 Census data.

Significant state action in the form of transportation decisions enabled Aurora, which is 40 miles west of Chicago, to become much more of a bedroom community of Chicago during the 1990s. [In 19--], a major highway was extended from Chicago, past Naperville, to Aurora, making the city an easy commute to Chicago and spurring development along the commuter route. The State further improved the ease of transit into Chicago by replacing the old train line [in 1980] with a new commuter line that takes commuters directly from Aurora into downtown Chicago. These state actions laid the groundwork for later improvements that allowed a small stand-alone city to convert to a higher-end suburb with nearby jobs.

A second, parallel set of actions occurred at the city level, reflecting vision and leadership. Thirty years ago, Aurora was a "self-contained" working class city, anchored by manufacturing, mostly in the form of steel fabrication and farm equipment. The population was majority white ethnic with a substantial number of Mexican immigrants and a smaller African-American community. We were told that Mayor Al McCoy, who ran the city from the late 1960s through most of the 1970s, had the foresight to know that Aurora could not survive in the long run without major changes, and initiated annexation efforts. Residents speak of this common community vision for Aurora, a "foresight of leadership" that was articulated through 50 hearings on the annexation efforts. Aurora thus successfully bid against neighboring Naperville, a much wealthier town, to annex a parcel of land between them that was being developed into a major mall. The mall became Fox Valley, the area's premiere high-end shopping center, bringing Aurora substantial sales tax revenue. Many people with whom we spoke credited this initial boost in city revenue, as well as the new jobs created by the mall, with helping jump-start Aurora's revitalization. The annexation further benefited Aurora when developers amended their original plan for middle-income houses by adding high-end homes there, attracting higher-income families to Aurora.

The greater-than-expected increase in income in Aurora may also reflect the city's housing policy. In the 1980s, Mayor Jack Hill saw residential improvements as key to the city's future and implemented a set of policies, including changing zoning regulations to reduce the construction of multiple-family buildings and retain existing single-family homes. The law ensured the quality and value of existing homes, making investment in the city more attractive for new homeowners. It may also have limited the availability of affordable housing at the lower end of the income spectrum, discouraging in-migration of lower-income families to Aurora.

A joint city/state action may have contributed to the desirability of Aurora. In the early 1990s, when Aurora and neighboring Chicago satellite cities Elgin and Joliet were still struggling to overcome the loss of manufacturing jobs, they successfully lobbied the state to pass a distressed riverside town law that allowed only their cities to contract with casinos to put gaming establishments on their waterfront. Aurora receives $10 million per year from Hollywood Casino, which it lured with incentives including a new, city-financed parking lot. While it is unclear whether the casino has directly contributed to income (or population) growth, it is one of a set of actions that has anchored the downtown in a way that makes the city a more attractive place to live. As one resident told us, Aurora was a place that, twenty years ago, no one wanted to visit even during the day. Now it is a draw. As a result of the increase in Aurora's desirability

as a place to live, the city is able to retain current residents and attract back their children, according to the interviews.

Rather than selective in-migration, in which individuals choose to move to a city, income increase in a city may also occur as a result of annexation, when city action results in individuals becoming a part of that city. While Aurora benefited from annexation of land between it and Naperville, annexation was even more important to the increase in income that Charlotte experienced. North Carolina's liberal annexation law allows cities to unilaterally bring close-in suburbs into their city limits, thus ensuring revenue-sharing, as well as increasing income and population in the city. Charlotte's annexation of several higher-income areas has helped it to achieve exactly that.

H2: Selective out-migration of low-income households increased the city's per capita income. We saw little or no evidence of selective out-migration in Aurora, which continues to absorb large numbers of Mexican immigrants. 1990 Census data report Hispanics as constituting 22.6% of the city's population, and by 2000, the percentage had increased to 32.6. Housing affordability decreased according to our model more than expected between 1990 and 2000, suggesting that the influx of higher income families is making it more difficult for lower income families to find affordable housing. However, the interviews indicated that Aurora has a good stock of affordable housing, albeit in more marginal parts of the city, which is supported by our finding that affordable housing at the 50% level was as predicted. The data suggest that in-migration, rather than out-, is responsible for the income growth we found.

The Aurora experience stands in sharp contrast to San Francisco, and, to a lesser extent, Chicago, where some of the strong growth in per-capita income has been attributed to "exporting poverty." In Chicago, razing the Cabrini Green and Robert Taylor public housing complexes is seen by many housing advocates as the latest in a string of city decisions that have effectively kicked poor people out of the city and sent them to surrounding low-income suburbs. Indeed, mayors of troubled satellite cities south of Chicago, and even across the state border in Gary, Indiana, report influxes of impoverished ex-Chicagoans who lost their homes or can no longer afford to live in the city. In San Francisco, we were told that high housing prices have driven the poor out and led middle- and lower-income families with children to leave.

H3: Income of long-term residents increased greater than expected. This hypothesis was harder to test since it is not possible to track the income of people who were in Aurora in both 1990 and 2000. Aurora did lose a large number of unionized manufacturing jobs, but this was largely in the 1970-80s. Forty-three percent of employed Aurora residents worked in manufacturing in 1970, decreasing to 22.4% in 2000.[7] During the same time period, the largest increases were in business and repair services (from 2.8% in 1970 to 5.8% in 1990 and 8.1% in 2000) and professional services (14.5% in 1970, 18.2% in 1990 and 19.3% in 2000). Since unionized manufacturing jobs tend to be high-wage jobs, the jobs that replaced them probably had lower average wages, making it unlikely that income increased for residents who lived in Aurora in both 1990 and 2000. We were told by several people that some children of the uneducated laborers now own and manage labor industries such as landscaping. If laborers

[7] SOCDS, 1970, 1990 and 2000 Census data.

became successful business owners and students became employed professionals, it would also help explain the unusual income growth.

The case study indicates that state policy may have played a role in Aurora's better-than-predicted performance on our model for the income indicator through transportation decisions that connected Aurora to Chicago. Aurora's city leaders took advantage of this opportunity through annexation, development, and using increased revenues wisely. This combination of actions resulted in Aurora becoming a desirable place to live, thus keeping some of its residents as they became better-educated and higher-paid while attracting new residents with high incomes.

Lansing

At the other end of the income predictions is Lansing, which experienced a smaller increase in income than that predicted by our model. The model predicted per capita income would increase from $12,232 in 1990 to $18,490 in 2000, while actual per capita income was $17,924 in 2000.

Hypotheses: While several hypotheses were proposed, the one most supported by the evidence was a reduction of the income of residents of Lansing between 1990 and 2000, resulting from the change in employment by industry sector as the domestic automobile industry continued to decline. The other hypothesis that was supported by the interviews and data was selective out-migration by higher-income families seeking better schools and better housing stock.

H1: Change in industry mix led to lower per capita income. While Michigan's economy has diversified somewhat in the past decade, it continues to be dominated by, and rely heavily on, the automobile manufacturing industry, an industry that had high productivity and high wages throughout the post-World War II era. In 1989, motor vehicle manufacturing constituted 7.4% of Michigan's employment, with a location quotient of 9.28.[8] That is, Michigan's concentration of employment in the auto manufacturing industry was more than 9 times that of the nation's share. By 1999, when auto manufacturing accounted for only 6.3% of the state's employment, and the location quotient had decreased to 7.95, Michigan's workers remained almost eight times more heavily employed in auto manufacturing than the rest of the nation. Average compensation per employee for auto manufacturing was $87,572 in Michigan in 2000 (in 1996 dollars) compared to the national average of $64,267. The contraction in Michigan's auto manufacturing industry translates into significant income reduction since no other industry has average compensation that is as high. Motor vehicle manufacturing decreased as a share of Michigan's earnings from 13.29% in 1991 to 12.67% in 2000.[9]

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[8] Crary, Joan P., George A. Fulton, and Saul H. Hymans (2003). Overview of the Michigan Economy. In Charles L. Ballard, Paul N. Courant, Douglas C. Drake, Ronald C. Fisher, and Elisabeth R. Gerber, eds. *Michigan at the Millennium*: *A Benchmark and Analysis of Its Fiscal and Economic Structure*. East Lansing, MI: Michigan State University Press, pp. 13-33.

[9] Glazer, Lou and Donald Grimes (December 2002). *Michigan Workers in the Boom Years: Employment and Employment Earnings 1991-2000.*

In 1989, 15% of the full-time workforce in the Lansing MSA was employed in the auto industry.[10] Between 1990 and 2000, Lansing lost 6100 motor vehicle manufacturing jobs, a loss of 31%.[11] The regional location quotient for motor vehicles and equipment fell from 11.95 in 1990 to 7.14 in 2000.[12] Thus, as one of Michigan's cities with a substantial dependence on the auto industry, Lansing experienced a similar reduction in the employment of its residents in the auto industry. The three industries showing an increase in the percentage of employed residents were construction (1.2%), business and repair services (1.7%), and personal services (2.9%),[13] all of which provide lower wages than auto manufacturing. The result of the change in Lansing's industry mix was lower per capita income, as people found jobs outside of the automobile industry or highly skilled workers left the city to find jobs.

A related hypothesis was that wages dropped in connection with the decline in union membership. Union membership declined in Michigan from 40% in the 1970s to 23% in 2000, similar to the decline nationally,[14] but this decline was likely to have occurred outside of the major auto plants. Similarly, it was suggested that per capita income decreased as employees in manufacturing were less often asked to work overtime, with such labor needs met by part-time, lower wage employees. According to these hypotheses, the State's economic structure played a large role in Lansing's under-performance on income in relation to the predictions of our model. A major state policy during this time period was significant tax reductions to make Michigan a more hospitable place for business, with some advocates arguing that this had substantial beneficial effects and others arguing that it only contributed to the problem in terms of brining about a public service crisis.

In the late 1990s, Michigan experienced the same boom as the nation, with its unemployment rate at 3.6% in 2000, having fallen below 6% in 1994 for the first time since 1966.[15] Thus, with high employment but a declining auto industry, many residents were employed at lower wage jobs. In Lansing, the unemployment rate declined from 8.4% in 1990 to 6.4% in 2000, yet the labor force participation rate declined slightly from 69% to 68.6%.[16] Thus, Lansing appears to have failed to benefit fully from the national boom. While the model controlled for the percentage of residents without a high school degree, the low educational attainment of Michigan's and Lansing's workforce was suggested in the interviews as a reason for the low per capita income. Earnings in Michigan did decline between 1990 and 2000 for

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[10] Johnson, George E. (2003). The Evolution of the Michigan Labor Market from 1970 to 2001. In Charles L. Ballard, Paul N. Courant, Douglas C. Drake, Ronald C. Fisher, and Elisabeth R. Gerber, eds. *Michigan at the Millennium*: *A Benchmark and Analysis of Its Fiscal and Economic Structure*. East Lansing, MI: Michigan State University Press, pp. 57-78, 69.

[11] Crary, David, George Erickeck, and Allen C. Goodman (2003). Economic Performance of Michigan Cities and Metropolitan Areas. In Charles L. Ballard, Paul N. Courant, Douglas C. Drake, Ronald C. Fisher, and Elisabeth R. Gerber, eds. *Michigan at the Millennium*: *A Benchmark and Analysis of Its Fiscal and Economic Structure*. East Lansing, MI: Michigan State University Press, pp. 215-239, 220.

[12] Crary, David, et al. (2003), p. 218.

[13] SOCDS 1990, 2000 Census data

[14] Johnson (2003), p. 70.

[15] Crary, Joan, et al. (2003), p. 14.

[16] SOCDS 199, 2000 Census Data

those without a high school education or GED.[17] However, the percentage of Lansing's residents without a high school degree in both 1990 (21.7%) and 2000 (17.6%) is lower than the national average for those periods (24.8% in 1990, 19.6% in 2000),[18] failing to support this hypothesis.

Lansing's mayor, David Hollister, who served from 1993-2003, worked with the State government during the 1990s to improve employment opportunities in Lansing. He was able to persuade General Motors to place one new plant in Lansing. His efforts included bringing Jackson National Life Company to the region as well as a successful regional campaign to have General Motors build another new plant. Both of these were accomplished through the use of "425 agreements."

Referred to as "contractual annexation," the State permits a 425 agreement between two jurisdictions to provide for sharing property tax revenues generated by a conditional land transfer for economic development. These agreements, which are available to any municipality, are commonly used when a local jurisdiction does not have adequate land or infrastructure for a business that wants to locate or expand in that municipality. Structured as a conditional land transfer, the property is treated as if it belongs to the receiving jurisdiction. Lansing entered into an agreement with the town of Delta when General Motors wanted to construct a new plant and Lansing did not have sufficient land. Lansing benefited from being able to provide GM with a local option for its factory and from the property and income taxes generated by the plant while Delta shared in the revenues from the development that it would not have been able to acquire without Lansing's infrastructure and the tax break that Lansing, as a core community, could offer to GM that Delta could not. The conditional transfer of the property can affect Lansing's per capita income, because the residents at that site become residents of Lansing (even having their voting records transferred) for the duration of the agreement period.

While Lansing did not perform as well as expected on per capita income, several people we interviewed suggested that it would have done more poorly had it not been for the efforts of Mayor Hollister and his successful working relationship with Governor Engler.

H2: Selective out-migration of high-income households reduced per capita income. While the decline of the auto industry and its replacement with lower wage jobs has directly affected the incomes of the residents of Lansing, the out-migration of families with higher incomes from Lansing likely also reduced the city's per capita income. Lansing's population declined from 127,321 in 1990 to 119,128 in 2000 (our model predicted that it would increase slightly to 127,842). During this time period, the percentage of Lansing's residents in the lowest quintile of the national income brackets increased from 23.8% to 24.2% while those in the highest quintile decreased from 12.6% to 10.4%.[19] These data support the hypotheses that higher income families left Lansing.

The reason for their departure is less clear. The most commonly suggested reason was the poor performance of city schools, and this was supported by a survey conducted on behalf of

[17] Glazer and Grimes (2002), p. 7.

[18] Census data, accessed at http://www.census.gov/population/socdemo/education/phct41/table1.xls

[19] SOCDS, 1990, 2000 Census Data

Lansing in 1999[20]. Other reasons provided by survey respondents for moving to the suburbs included better services, better housing options and less crime.

Several events occurred with respect to schools during the period between 1990 and 2000 that may relate to the out-migration of high income families from Lansing. First, the enactment of Proposal A in 1994 limited property taxes, centralized school funding, and implemented a foundation system for distributing funds to schools in a more equitable manner by setting a funding floor.[21] With funding tied to pupil enrollment, declining enrollment reduces a school district's funds more quickly than costs can be reduced. Lansing's public schools, which have experienced declining enrollment since the 1980s according to the panel discussion, would be even more challenged to meet their students' needs post-1994 as funds decreased. This may have served as an incentive to families to leave the city for the suburbs where schools had more funding and better facilities.

In 1997, legislation was enacted implementing a "schools of choice" program. This inter-district public school choice program enables students to attend schools in a neighboring district if the receiving district agrees to participate in the program. The incentive for participation is that the receiving district receives the full state foundation grant for that child. Lansing is noted as having the most dynamic local schooling market in Michigan with the largest percentage of students in districts outside Lansing. Only fifty-five percent of the students in the Lansing School District attended their neighborhood school in 2004.[22] Intense competition in the metropolitan area, we were told, has resulted in Lansing implementing new programs and increasing its marketing in an attempt to respond to the challenge. Michigan's de-linking of education from place of residence may enable Lansing to reduce a main push factor in the flow of residents from the city, since families can continue to live in the city while sending their children to suburban schools. However, the timing of this change, which was initiated in 1997, likely occurred too late to prevent the out-migration of the 1990s.

In addition to education, a reduction in other city services may have encouraged out-migration of higher income families from Lansing to the suburbs. Lansing's revenues increased from $68.8 million in 1990 of which $14.8 million were intergovernmental funds to $76 million (in 1990 dollars) with $16.4 million in intergovernmental funds in 2000. While this would suggest that Lansing could continue to provide services at the same level as before, the city received fewer discretionary funds. Governor Engler, during his tenure from 1991-2003, enacted significant tax cuts, resulting in a tax code that currently brings in $8 billion less than it did in 1992.[23] The tax cuts combined with the passage of Proposal A reduced the revenues available for both the constitutional and statutory portions of revenue sharing to cities and other municipalities. Reduced in-lieu payments by the State for services, such as fire and police,

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[20] Housing Market Study, City of Lansing, prepared by Gove Associates and W. E. Upjohn Institute. Dec. 1999.

[21] See Cullen, Julie Berry and Loeb, Susanna (2003). K-12 Education in Michigan. In Charles L. Ballard, Paul N. Courant, Douglas C. Drake, Ronald C. Fisher, and Elisabeth R. Gerber, eds. *Michigan at the Millennium*: *A Benchmark and Analysis of Its Fiscal and Economic Structure*. East Lansing, MI: Michigan State University Press, pp. 299-321.

[22] Arsen, David, David Plank, & Gary Sykes (July 2002*). Working Paper #10: School Choice Policies: How Have They Affected Michigan's Education System.*

[23] Data prepared by the Office of Revenue and Tax Analysis, Michigan Department of Treasury, Feb. 24, 2006.

which Lansing provided as the capitol, compounded Lansing's fiscal difficulties, making it difficult for Lansing to continue providing the same level of services to its residents, according to several of the people interviewed.

Other elements besides services could have led to the out-migration of higher income families, such as housing stock. A 1999 housing survey conducted in the Lansing area found that people preferred larger, newer houses, making the median Lansing home with 1,010 square feet and 53 years old less desirable than those available in the surrounding communities. Lansing had a much larger percentage of 1 and 2 bedroom homes and smaller percentage of 3 to 5 bedroom homes than neighboring jurisdictions.[24]

The factors identified above may have led to the out-migration of higher-income families from Lansing which reduced the per capita income of residents greater than was predicted by the model. While the decline of Michigan's auto industry was the main driver of our findings, state policy had a role in the outcome through its distribution of funds to cities, school funding and school choice programs.

Population

Charlotte and Durham

Both Charlotte and Durham experienced population growth in the 1990s that exceeded by far the levels predicted by our model, placing them in the top 20 of the 325 large cities we analyzed for exceeding predicted population growth. Both cities grew by 37%, rather than the 23% and 22% increases predicted for Charlotte and Durham, respectively.

Hypotheses: Several hypotheses were considered to explain the strong population growth: strong regional economic growth, in-migration of Hispanics who came because of the economic growth and settled in the city because of housing costs, and in-migration of middle- and higher-income households as a result of the state's and cities' efforts to attract educated residents. Another often-mentioned hypothesis was the cities' annexation of nearby land and communities.

H1: Economic growth attracted people to the region. Charlotte's and Durham's strong regional economies resulted, in part, from a combination of strategic decisions at the state level and vision and leadership at the city level, including that of civic leaders. For nearly half a century, North Carolina has sustained a vision for developing a knowledge-based technology-rich economy rooted in the quality of its higher education system, community colleges, and the Research Triangle Park.

The Research Triangle Park has been a major generator of jobs and income in the Raleigh-Durham-Chapel Hill area. Originating as an idea from a state commission appointed by Governor Luther Hodges in 1955, the Research Triangle Park was started as an initiative by the three major area universities, the University of North Carolina, North Carolina State, and Duke,

[24] Housing Market Study, City of Lansing, prepared by Gove Associates and W. E. Upjohn Institute. Dec. 1999.

but with funding from the private sector. The focus in the Park's recruitment efforts has been to attract knowledge-based businesses (it limits the amount of manufacturing), and over the years businesses in the park have worked closely with the local universities. In 2000, 32.4% of Durham's residents were employed in the NAICS classification for "educational, health, and social services," compared with the average for central cities of 21.2%.[25]

Charlotte, although it lacks the strong university connection of Durham, benefits from a strong corporate community. Charlotte's, and North Carolina's, persistence in maintaining a predictable pro-business policy record encouraged entrepreneurs to invest in the community. This was noted by several Charlotte interviewees as playing an important role in its successful redevelopment. We were told many times that "the business of Charlotte is business," that risk reduction was a part of that strategy, and that historical events illustrate the consistent use over time of that strategy. The strategy appears to have been successful. The Charlotte region was ranked 32nd for percentage growth rate in gross metropolitan product between 1990 and 2000, increasing 109% from $29.3 billion to $61.3 billion.[26]

North Carolina also has been the leader among states that have used its community college system and its workforce development capacity as an economic development tool. The extensive community college system – the goal is to have a community college within 20 miles of every North Carolina resident – focuses on customized training for specific jobs, frequently in close collaboration with local businesses, rather than on preparing students for advancement into the final two years of the four year university system (the 2+2 approach). The North Carolina system is flexible enough so that businesses considering locating in the area (or already there) are offered customized training for potential employees, targeted to the specific needs of the business. It was cited by interviewees in some of the other states we visited as the national leader in providing customized training through the community college system.

Although Durham and Charlotte have followed different paths, each has benefited from state policies on education and state actions in providing an environment conducive to business attraction and retention. Drawing business investment to a city helps to bring good jobs, which, in turn, attracts residents who further enhance the city's assets.

H2: In-migration of Hispanics, drawn by economic growth and affordable housing, increased the population. The population growth of both Charlotte and Durham consists, in part, of the large influx of foreign immigrants to North Carolina between 1990 and 2000. The percent of Durham's residents who were foreign-born increased from 3.8% in 1990 to 12% in 2000. Charlotte experienced a similar increase from 3.8% to 11%.[27] Hispanics account for a large portion of this increase in both cities, increasing in Durham from 1,713 residents (1.3%) in 1990 to 16,0122 residents (8.6%) in 2000 and in Charlotte from 5,261 residents (1.3%) to 39,800 (7.4%).

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[25] SOCDS, 2000 Census data

[26] U.S. Conference of Mayors (July, 2001). Top Percentage Growth Rates for U.S. City/County Metro Economies (1990-2000). *U.S. Metro Economies: The Engines of America's Growth.*

[27] SOCDS, 1990 and 2000 Census data

As mentioned above, both cities benefited from regional economic growth, and the regions experienced an increase in Hispanics too, though on a smaller scale. Durham's suburbs increased from 1.1% to 5.3% Hispanic between 1990 and 2000, and Charlotte's suburbs increased from 0.6% to 3.4% Hispanic.

Housing costs in Charlotte and Durham have remained affordable, especially in comparison with other metropolitan areas with similar employers and amenities. Both performed closely to what the model predicted at the 30% and 50% levels, despite substantial population growth. The combination of job growth, effective schools and affordable housing goes far in explaining the greater-than-expected population growth, but does not resolve the possible role of state policy in this outcome.

H3: Population increased more than expected because the cities attracted educated and higher-income residents. The actions of the cities and state in fostering economic growth in the regions contributed to population growth. In addition, each city made a concerted effort to offer amenities and quality of life to potential employees, which also drives economic growth, as businesses seek out an educated workforce.

In Charlotte, we were told that the vision of corporate leaders, including Hugh McColl (NationsBank/Bank of America), Ed Crutchfield **(**First Union/Wachovia) and William Lee (Duke Power), led to revitalization of the city, as the burgeoning banking industry drew high income employees and other businesses to Charlotte. McColl perceived early on that he could not have a great bank without a great city, and he worked to create a vibrant city for his bank. His vision involved creating amenities for his employees in the downtown; changing low-income and blighted neighborhoods into safe, attractive, mixed-income communities; and generally improving the quality of life throughout the city. All of these actions, we were told, helped turn Charlotte from an unattractive, high-crime city into a desirable community for everyone.

This "campaign" to better the city of Charlotte parallels in many ways that of Chicago's Mayor Daley. In both places, leaders undertook intentional, comprehensive measures to turn around cities with high rates of crime and unemployment and to make them safe and inviting. Both cities arguably benefited greatly from these efforts in terms of drawing both residents and businesses to their cities. After four decades of population loss, Chicago broke even in the mid-1990s and began to register its first population gains at the end of that decade. Many of the people interviewed attributed this turnaround to the leadership and vision of Mayor Daley, who pledged to make Chicago a place where middle-class people would find parks, schools, basic services, and other amenities that would make the city an inherently great place where they would want to live. He has worked aggressively to make that vision a reality, investing millions in building Millennium Park, refurbishing public spaces and parks throughout the city, lighting public walkways to create and enforce a sense of safety, and putting substantial sums into new schools, fire departments, police offices, and other public services. Indeed, even the poorer neighborhoods find basic services substantially improved, we were told. Chicago's income distribution, compared to the nation, has shifted higher, but remains more heavily weighted to lower-income residents. The portion of residents with income levels in the nation's 20% lowest income bracket was 27.6% in 1990 and 27.7% in 2000. In the top 20% national bracket, Chicago has 17.2% of its residents in 2000, compared to 16% in 1990.

Taking a different path, Durham worked with neighboring Raleigh and Chapel Hill and their universities to develop Research Triangle Park, a driver of economic growth and a strong attraction for an educated workforce. This economic development strategy has been supplemented by a culture in which the city has championed its residents, most of whom respect and enjoy the diversity of their community, and its history as a blue-collar tobacco town. It also trades on its reputation as a progressive creative community (boasting two MacArthur fellow recipients) and as a cultural oasis for blues music and numerous arts festivals. When Durham residents discuss leadership, the discussion centers upon Bill Bell and his leadership during the merger of the city and county school systems. The educational process was failing the metro area students, and as one participant told us, "Bill Bell picked up the ball." During this time, he was Durham County Commission chair, but is currently mayor of the city. The merger brought major investment into the combined system and reduced "a barrier to the city tax base" that was impeding the ability of the city's base to grow.

As several interviewees told us in North Carolina, both the Research Triangle area and Charlotte have been extremely successful in attracting educated residents from throughout the United States. It is notable that the educational attainment of Charlotte's and Durham's residents is greater than that of residents in their respective suburbs; 36.4% of those aged 25 years or older in Charlotte had at least a college degree in 2000, while in the suburbs only 21% did. In Durham, it was 41.8% in the city, compared with 34% in the suburbs. Thus, Charlotte and Durham are successfully attracting the well-educated. And both they and their suburbs are exceeding the nation, in which the average percentage of residents with at least a college degree increased from 22% in 1990 to 27% in 2000.

Another significant component of the strong population growth may be related to the consolidated character of the K-12 education systems in both cities. A good school system attracts residents as well as businesses that are looking for an educated workforce. Both Durham and Charlotte benefit from a consolidated city/county school system, one that mixes urban and suburban students within the same district, which allows for revenue sharing as well as school choice at a level that is available in very few places in the country. Through design of the districts, children are integrated racially and socio-economically without resorting to busing or other coercive measures and without resulting in schools with high percentages of minorities. The results in Charlotte have been striking, with parents report overwhelming satisfaction with the broad school choices available, and test scores among all students, including poorer minority kids, among the nation's highest. In addition, North Carolina is a pioneer in the area of state-funded pre-kindergarten programs. With a strong, effective city school system, parents are not forced to the suburbs in search of good schools; they can stay in (or move to) the city.

H4: Annexation increased the population. North Carolina's annexation policy, which makes it extraordinarily easy to incorporate neighboring property into the city and difficult for outside communities to self-incorporate, may contribute to the greater than predicted increase in its cities' populations. Annexation does not require the vote of residents of areas that the city wants to annex, but municipal incorporation requires the area to prove self-reliance, and even permission from the city if the area is close to the city's boundary. While annexation is not related directly to our selected cities' population growth –we controlled for the number of people

annexed during the 1990s as a percent of the 1990 population in our model – it may well be indirectly related. For example, it may reduce people's incentive to move to nearby suburbs to escape taxes and other disadvantages that are perceived, in other states, as city-specific, because they foresee the new development to which they are moving is likely to be annexed into the city. The city's annexation opportunities may enable it to maintain a high level of services with lower taxes, since it benefits from the nearby development, maintaining the desirability of the city to current and prospective residents.

The cities in North Carolina experienced strong population growth during the 1990s. Both the Research Triangle area and Charlotte have been successful in attracting educated residents from throughout the United States. They have benefited from state policies, such as establishing the Research Triangle, creating a predictable environment for businesses, and providing an education system that is a successful economic development tool, combined with strong local leadership, both public and private. While other factors and idiosyncrasies certainly have a role, these cities illustrate some state policies that can support city well-being.

Pittsburgh

We visited Pittsburgh because, like many of Pennsylvania's cities, it continued to lose population in the 1990s, when many other formerly heavily industrial cities in the nation had turned around. Indeed, our model predicted that it hold steady at nearly 370,000 residents by the decade's end, but it had only 335,000. The 35,000-resident loss placed it well in the bottom third of all of our 325 cities. Clearly, Pittsburgh's loss of its manufacturing base – it has always been a steel town – continues to plague it. The story of Pittsburgh is almost the mirror opposite of those of Charlotte and Chicago, except that, twenty years ago, all three faced many of the same challenges: unemployment, a declining tax base from loss of industry, and an exodus of middle-class and wealthy people from the city. There, however, the commonalities end. The questions for us were: what caused residents to continue to leave long after the manufacturing jobs had largely disappeared, and what role might the Commonwealth's policy have played?

Hypotheses: We developed two primary hypotheses regarding Pittsburgh's population loss: city residents moved to the suburbs to obtain a better package of services for lower taxes, and people left the region for regions with more job opportunities and better amenities.

H1: City residents moved to the suburbs to obtain a better tax/service package. Pittsburgh has been suffering since the early 1990s from a structural deficit, receiving less in revenues than it has in costs, as a result of a decrease in its population that was not matched by a decrease in city employees.[28] This structural deficit has required the city to increase taxes and/or reduce services, both of which drive residents out of the city to neighboring jurisdictions with lower taxes and/or better services.

The city's fiscal distress was increased when, to fund its pension obligations, it issued $269 million in non-callable bonds in 1996 and 1998. The city invested the proceeds in the stock market in time to experience the stock market downturn in 2000. One report notes that the city is

[28] Ochs, Jack (Dec. 2005). The Roots of Pittsburgh's Financial Crisis. *Pittsburgh Economic Quarterly*. University of Pittsburgh.

paying nearly $17 million in interest annually on these bonds, which adds significantly to its operating costs,[29] and has current unfunded pension liabilities in excess of $450 million. Other city actions in response to the structural deficit, such as capitalizing a 30 year lease with the water and sewer authority, have worsened Pittsburgh's fiscal troubles, culminating in the city's qualification as a distressed city under the Commonwealth's Municipalities Financial Recovery Act (Act 47) in December 2003. While this step may allow Pittsburgh to recover going forward, it accentuates the fiscal difficulties the city faced during the 1990s, difficulties that likely are related to its greater than expected population loss.

The hypothesis that residents moved to nearby communities is supported by data on the daytime population in Pittsburgh. Based on 2000 Census data, the daytime population in Pittsburgh is estimated to be 41% higher than its resident population, ranking fourth highest in the nation.[30] While Pittsburgh has only 14% of the population in the MSA, it has over 30% of the total employment. These data strongly suggest that people working in the city are not choosing to live in the city; however, since they are only available for 2000, we cannot determine if this changed during the 1990s. The rest of the Pittsburgh MSA experienced zero population growth between 1990 and 2000, suggesting that the dominant trend was out-migration from the region to seek better job opportunities.

The large influx of commuters suggests that Pittsburgh has a vibrant economy, providing revenues to the city, especially through real estate taxes. However, many of the major employers – hospitals and universities -- are non-profits which are exempt from taxes. Estimates of the percentage of real estate exempt from taxes ranged from 30 to 40%.

Residents incur a wage tax of 3%, 1% for the city and 2% for the school district. We were told almost uniformly that Pittsburgh's residents' tax burden is higher than that imposed in the suburbs. As another example of the city's urgent need for revenues, Pittsburgh imposes a parking tax of 50%, the highest in the country. While its intent is to raise revenue, it prevents people from coming to Pittsburgh to shop or dine, harming retail and entertainment establishments in the city. Pittsburgh sought to increase its occupational privilege tax (a commuter tax) but was prohibited by the state legislature from doing so, leaving it at $10 per year. Only once it was operating under Act 47 was the tax increased – to $52 a year.

As mentioned, 2% of the wage tax goes to the school district. Several interviewees explained to us that the school districts can raise taxes without a referendum and are not limited on the amount of tax they impose. While one would thing that these revenues would result in an effective school system, the poor school system was mentioned regularly as a reason for families leaving the city. Enrollment in Pittsburgh's public schools has decreased 50% in the last twenty years, yet the infrastructure has not been reduced proportionately. As one city official explained, the school district could close three elementary schools a year for the next 10 years and still have

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[29] Burnham, James B. (Oct. 2002). *Pittsburgh's Pension Plan: The Black Hole that Won't Go Away.* Allegheny Institute Report #02-11

[30] Briem, Christopher (Dec. 2005). Daytime Population in the City of Pittsburgh. *Pittsburgh Economic Quarterly*. University of Pittsburgh.

overcapacity. Again, Pittsburgh's residents are paying for services and infrastructure that was established to serve a population twice its size.

One element of Pittsburgh's fiscal crisis has been identified as a direct result of state policy. Pennsylvania law regarding mandatory arbitration for public service contracts, Act 111, has resulted in a huge fiscal obligation for Pittsburgh. According to several interviewees, when Pittsburgh completed the capitalization of the perpetual lease for the water and sewer authority, it had over $40 million left after paying its deficits. In the 1997 arbitration award, the arbitrator awarded part of the funds from the capitalization to the union. The city's fiscal crisis has reduced the city's ability to invest in itself in terms of amenities and public space, resulted in the need to continue to levy high taxes to pay for less-than-high-quality services, and increased unpredictability – all of which make it an undesirable place to live or start a business. This has led to both residents and newcomers deciding to live in the suburbs.

H2: Households left the region to seek better jobs and amenities in other regions. We were told by several people that the ritual after graduation at CMU is the arrival of a charter plane, coming to take CMU's graduates to their new jobs at Microsoft. The data suggest that this may not be pure hyperbole. The Pittsburgh MSA lost 1.5% of its population between 1990 and 2000.[31] However, the population decline was even greater in the prior decade, with a loss of 6.9% of the population from the MSA, with the city of Pittsburgh losing 12.8% of its population. Despite its investment in technology and other growing industries, Pittsburgh has been unable to transition from its manufacturing heritage to become a home to high-tech industry.

The Commonwealth has made investments to support technology, such as the Ben Franklin Innovation Partnership Program, a development program that received national acclaim as an innovative program during the 1980s. The program was dramatically downgraded by the Casey Administration which launched Industrial Resource Centers (IRC) in response to the federal government's Manufacturing Extension Partnership and the demand within the Commonwealth to address problems in its existing manufacturing base. As one person commented, "The Ben Franklins, initially the leading edge for technology in Pennsylvania, became invisible." Efforts appear to have been ineffective for two reasons. First, the small amounts, which dissipate as they are diffused to regions throughout the commonwealth, have not been adequate to make a difference. Second, the change in programs, without reflecting on the relative impact or merit of one or of the other, illustrates the reflexive nature of the change in policy with a change in administrations. This type of policy instability hurts economic development, since, as we were often told, "businesses like predictability."

Like Aurora, Pittsburgh is a heavily blue-collar city; its culture is steeped in steel mills. Indeed, one state government aide with whom we spoke suggested that this cultural legacy is partly to blame for the city's failure to transform itself in the boom years of the 1990s. Pittsburgh has had difficulty attracting businesses and, without those job opportunities, the talented young workforce left Pittsburgh upon completing their education.

[31] SOCDS, 1990 and 2000 Census data.

From our interviews, it seems reasonable to conclude that Durham's and Charlotte's over-performance on population growth is attributable, at least in part, to state policy. For Pittsburgh, the economic problems of the region overwhelm any impact, positive or negative, that stat policy could have.

Housing Affordability

Housing affordability is critical to the well-being of residents, but as one commenter said, "No mayor wants lower real estate prices." Thus, the goal is to have a demand for housing in the city, but an adequate supply to avoid prices so high that, like in San Francisco, one wonders, "Who can afford the median priced house?" Two housing affordability models were used: one for households paying more than 30 percent of their income on housing, whether mortgage or rent, and the other for those paying more than 50 percent.

Housing that costs more than 30 percent of one's income is typically considered a housing burden under HUD guidelines, and when it is more than 50 percent it is considered a severe housing burden. We interpret these categories a bit differently. This long-established definition fails to account for investment decisions many families currently are making to buy a more expensive house in anticipation of higher incomes and continued increases in property values. In other words, many families are intentionally spending more than 30% of their income on housing, but those spending 50% or more are doing so due to a lack of other options. Accordingly, while hypotheses for housing affordability at both levels were developed from the case studies, only the 50 percent housing affordability indicator is discussed here.

San Francisco

While California's cities did well on housing affordability in general (at both the 30% and 50% levels), San Francisco ranked near the very top. In other words, it exceeded the affordability of housing at the 50% level predicted by our model. Needless to say, this comes as a surprise to many people, as few would think of San Francisco and affordable housing in the same sentence. We therefore stress again that this does not mean that, in absolute numbers, fewer households paid 50% or more of their income on housing than in other places, but rather that, relative to what the model predicted based on 1990 numbers, San Francisco performed well. It is important, however, to note that the actual numbers did decrease: 16.7% of households paid more than 50% of their income for housing in 1990 compared to 15.8% in 2000. Our model had predicted that 17.6% of households in San Francisco would experience a severe housing burden in 2000. We thus went to California, and San Francisco, to ask why housing costs were burdening fewer households.

Hypotheses: We explored several hypotheses. San Francisco is one of a few cities (and the only one in our case study) with rent control, which may have accounted for housing remaining affordable. Another hypothesis frequently mentioned was that San Francisco has an extremely high-income population, and housing was affordable to those high-income residents. A related hypothesis is that the high price of housing and generally high cost of living in San Francisco drove middle- and lower-income people out of the city between 1990 and 2000, leaving only those for whom housing was affordable. The other hypothesis is that city activities,

including housing developed with state-mandated set-asides from tax increment financing, have helped preserve and develop some affordable housing, as have strong non-profit organizations in San Francisco.

H1: Rent control kept prices affordable. San Francisco has the second highest percentage of renters in the country, 65% -- both in 1990 and 2000, compared to the national average of 34%.[32] San Francisco enacted a rent control law and restrictive condo conversion laws. The State government interceded, limiting rent control to buildings constructed prior to June 1, 1979. Thus, rent control covers only buildings constructed before 1979; however, these constitute 90% of the city's housing stock. Over 70% of San Francisco's rental units are subject to rent control (resulting in 45% of the city's population living in rent controlled units). Another 18% are also not subject to market rate rents, because of subsidies, rent reductions, or affordability restrictions. In 2000, 78% of the rent-controlled units contained no children under the age of 18, suggesting that families are not the primary recipient of the benefits of rent control. Furthermore, a quarter of the rent-controlled units were occupied in 2000 by households with incomes of $100,000 or greater (compared with 30% of the market rate units). Households with incomes below $35,000 occupied 43% of rent-controlled units and 38% of market rate units. While these data are only for 2000, they provide a sense, at that time, of how the benefits of rent-control were distributed among residents.

Rent control were mentioned by some people we interviewed as contributing to the affordability of housing, but we were told just as often that rent control was not effective. While many people continue to support rent control, others we spoke with called it "vacancy decontrol." That is, units come out from under rent control once the unit is vacated and rents can then drift up to meet market levels. Some noted that rent control does not keep prices down, because it is only effective for long-term residents, and San Francisco has a transient population. A study conducted for the San Francisco Board of Supervisors found "no significant difference between the housing cost burdens of households in rent controlled and market rate units."[33] While this suggests that rent-control is not responsible for greater-than-expected affordability, we are unable to determine the counterfactual – how much worse off would low-income residents be without rent control? For example, residents aged 65 and older occupy 11% of the rent-controlled units but only 5% of the market rate units; yet 69% of those living in the rent-controlled units pay more than 30% of their income for rent. This may be the result of fixed incomes that cannot keep up with rising housing costs.

H2: Residents' high incomes kept housing affordable. San Francisco has some of the highest housing costs in the country. With respect to home ownership, it has the second highest costs in the nation for a metro region.[34] The median sales price for a three bedroom home increased 82%, from $299,000 in 1990 to $543,000 in 2000 (but only 18% of the total units have 3 bedrooms, suggesting a premium for these larger units). For all single-family homes, the national median sales price rose 38%, from $149,800 to $207,000, between 1990 and 2000. In San Francisco, the price increase was much higher [exact figure to be added].

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[32] San Francisco Housing Data Book (2002).

[33] San Francisco Housing Data Book (2002), p. 72.

[34] San Francisco Housing Data Book (2002).

While San Francisco's housing prices are high, San Francisco ranked 5th of all 325 cities in our model on growth in per capita income, and it was already very high in 1990. Per capita income increased by 75% between 1990 and 2000. The percent of San Francisco households in the national lowest 20% income bracket decreased from 18.2% to 17.6% from 1990 to 2000, while the middle 60% income bracket also showed a decrease, from 55.5% to 48.3%. At the highest 20% bracket, the percentage of resident households increased from 26.3% to 34.1%. San Francisco clearly had a higher percentage of higher-income residents in 2000 than in 1990. The relationship between income and housing costs is more complicated than comparing percentage increases.

California voters enacted Proposition 13 in 1976. This law limits the property tax rate to 1% of assessed value and limits increases in assessed value to 2% annually, until the property is sold, at which time it is re-assessed at its market value. This creates a strong incentive for owners not to move within the San Francisco region, presumably reducing the number of houses sold. While sale prices may be the second highest in the country, the number of owners who purchase their houses is likely to be fairly small (in 2000, only 3% of homeowners had moved into their unit that year). Thus, many residents likely are paying rent or making mortgage payments for units that were purchased at lower prices. The limited turnover, as a consequence of Proposition 13, may be keeping prices affordable, at least for many of the 35% of residents who own homes.

H3: Housing affordability reflects the out-migration of low- and moderate-income families. Another part of the story is the loss of the low- and moderate-income residents, especially families, from the city. As we were told, "Housing is affordable in San Francisco, because if you can't afford it, you don't live there." The main forces driving families from San Francisco are housing prices, housing stock, and poor schools, we were repeatedly told. As discussed above, the percentage of households at the lower and middle income brackets decreased. Poverty also decreased from 12.7% to 11.3%. While individuals may have gotten wealthier, we were repeatedly told that people left San Francisco because they could not afford the housing costs. The number of families with children decreased 3.7%, from 56,831 to 54,707 between 1990 and 2000, supporting the hypothesis that families with children left the city.

Chicago presents an interesting comparison. It too had fewer residents with a severe housing burden in 2000, decreasing from 18.6% of residents to 17.8%. People interviewed in Chicago expressed surprise that the city ranked above average in terms of housing affordability at the 50% level, given the substantial increases in housing prices during the 1990s. Some suggested that actions and policies that drove lower-income residents out of the city – razing public housing and others – may have played a role in this area as well. Chicago's poverty rate decreased from 21.6% to 19.6%, while its suburbs experienced an increase from 4.4% to 5.2%. Chicago's situation highlights the caveat we noted above: unlike the other indicators, housing affordability can be a double-edged sword. While a city wants housing to be available to its residents, one way to achieve that can be to ensure that the number of residents who need low-priced housing is limited, which does not solve a problem, but rather exports it, often to places less capable of handling the problem.

H4: Effective affordable housing programs provided an adequate supply of affordable housing. State and city laws and policies provide San Francisco with a variety of tools for producing affordable housing. Much of the affordable housing production has been attributed to the state requirement that redevelopment agencies set aside 20% of funds from tax increment financing for affordable housing for low and moderate income households. San Francisco's redevelopment agency aims to dedicate 50% of the tax increment for this purpose.

Another state policy to address the affordable housing need is California's requirement that each local government include in its general plan a housing element, which explains how it will accommodate the housing goals it has been assigned. The State assigns regional housing goals based on its population projections. The regional Council of Governments allocates the housing unit goals to the jurisdictions in their regions, which must each update the housing element of its general plan to indicate how it plans to meet those objectives over the next five years. The goals address all income levels: very low (0-50% of median income), low (50-80%), moderate (80-120%), and above moderate (120% and higher). The housing element does not require the building of new housing; instead, it requires the jurisdiction to take actions to ensure such housing could be built, addressing issues such as zoning and land-use controls, building codes, developer fees, and permit procedures. Without a requirement that housing actually be built to fulfill the plan, the law has been most effective in initiating a discussion about meeting diverse housing needs and providing political cover, rather than creating affordable units.

Many people mentioned the high quality of non-profit developers, as well as intermediaries, as contributing to the production of affordable housing. We also were told that the approval process, including compliance with California's Environmental Quality Act, substantially increases the cost and time to develop housing (for all income levels). Thus, San Francisco appears to have both strengths and challenges in producing affordable housing.

San Francisco also has inclusionary zoning guidelines for housing projects of 10 or more units that seek a conditional use permit or planned unit development, which requires that 10% of the units be affordable to renters earning 60% of the area median income (or earning 100% AMI for purchasing condo units). Production from this policy appears to be quite small, for example, 514 such units were constructed between 2001 and 2004.[35] California recently began a Workforce Housing Reward Program that provides financial incentives to cities and counties that issue building permits for housing for low- and very low-income households. Local governments that are in compliance with the housing element receive grants based on the number of bedrooms in qualifying rental or ownership units, which funds may be used for construction or acquisition of capital assets.

Both the state and city have implemented policies to increase the supply of affordable housing, including the TIF set aside, the housing element, rent control, and mandatory inclusionary zoning. However, between 1990 and 2000, 3,492 affordable housing units were produced in San Francisco, 28% of the total housing production during that time period.[36] While San Francisco is making progress, it seems unlikely that, at this volume, these policies and

[35] San Francisco Planning Department (July 2005). *Housing Inventory 2001-2004.*
[36] San Francisco Housing Data Book (2002).

programs could have accounted for a substantial part of our findings. The more likely reason for San Francisco's performance on this indicator is the increased income of its residents. Portland is more typical cities in this respect – increased incomes and a growing population are related to less affordable housing.

Portland

Portland, which performed better than predicted with respect to the income indicator, performed more poorly than expected on housing affordability, falling in the bottom one third of the 325 cities for housing at the 50% level. Clearly, this is not the same story as San Francisco. What, then, drove housing costs to be so unaffordable, especially for those at the lower end of the income scale?

Hypotheses: Two sets of hypotheses were presented: supply-side and demand-side. Our interviews suggest that a combination of the two is responsible. First, the state's growth boundary law and the regional government's implementation of it may limit supply. Second, Portland's unique community has a split in in-migration income levels, being a mixture of high-income technology engineers and young, creative, low-income workers and artists.

H1: Growth boundaries limit supply, making housing less affordable. Oregon's land use act requires that all of the state's cities and counties develop a comprehensive plan setting forth how they will comply with the act's planning goals. The plan is then subject to a formal approval process. All land within the state's Urban Growth Boundaries (UGB) must be rezoned to accommodate high-density development, and the UGB must include enough land to encompass 20 years of population and job growth.

Although still being debated with respect to the UGB, it is incontrovertible that when supply is restricted, prices will rise, unless some offsetting efforts are taken. Thus, Portland's UGB has resulted in an increase in the price of land per acre compared to what it otherwise would have been within the area. Developers have responded (as intended by proponents of the growth control boundaries) by increasing the density of development, so that more housing is located on the same amount of land. Therefore, more multi-family units and townhouses are being constructed and fewer single family homes with yards are available. As a result, housing prices per unit have not increased as much as they otherwise would have, although the price of a standardized housing unit certainly has increased, and choice has been restricted. Multi-family housing is not equivalent with low-income housing, and many of the newer high-density condo developments, especially downtown, have been luxury units.

The city has made efforts to address the limited supply of housing. We were told of a city policy that requires no-net-loss housing. If an economic development project would displace housing, it is required to replace the units. A strong, effective group of housing organizations and community development corporations have prevented the problem from being even worse, commenters said.

H2: The mix of residents creates a two-tiered demand, ADD. Portland is a desirable place to live, attracting a large number of highly educated in-migrants. Residents with a college

degree or higher increased from 25.9% in 1990 to 32.6% in 2000. The population of Portland increased more than predicted by over 6%. The population increase would, naturally, increase demand for housing.

We were often told of the large number of "under-employed" – people who came to Portland and took whatever jobs they could find to allow them to stay in the city despite giving up higher income opportunities in other regions. With a split between service and high-tech jobs, Portland is not a city with a proportionately high number of high-income residents. Unlike San Francisco, where 34% of its households are in the top 20% income bracket, Portland has only 17% of its households in the top 20% income bracket, 20.5% in the lowest 20% bracket, and 62.5% in the middle 60% bracket. While median household income rose by 56.9% in current dollars between 1990 and 2000, median home values rose by 14.3%. The higher housing prices, driven by the population growth, and the in-migration of low-income residents provides a convincing explanation for the discrepancy between the model's prediction and the city's greater than expected number of residents with a severe housing burden.

Tacoma serves as an interesting comparison. It ranked worse than both Seattle and Portland on the housing affordability indicators at both the 30% and 50% level. As was the case in Portland, the Seattle/Tacoma area's growth boundaries mandated by the state's Growth Management Act may have limited the supply of affordable housing. Tacoma has benefited from a regional housing boom around Seattle, much like Aurora has benefited from Chicago's revitalization. Good public transportation and a revitalized downtown have made Tacoma an attractive residential alternative for people working in Seattle.

Tacoma experienced a 10% population increase during the decade, accompanied by a 49% increase in its residents' median household income. This suggests an influx of higher-income residents to Tacoma. According to our interviews, these new residents, who can afford to pay more for housing, increased demand and drove up prices. The increased cost of land resulting from the growth management restrictions may have further reduced affordability. While housing costs in Tacoma rose by almost the same percentage as in Seattle (median home values increased by 87% and 90%, respectively), median household income increased more slowly in Tacoma -- 49.5%, versus 55.8% in Seattle. The result seems to be a bigger gap in the income-housing ratio that led to Tacoma's more severe shortage of affordable housing, especially for lower-income people. The mechanism is somewhat similar to Portland – after in-migration, the mix of residents consists of a high-income stratum that drives up prices and causes the lower-income group to suffer a greater housing burden.

To the extent higher prices resulted from the growth management restrictions enacted in Oregon and Washington, state policy has played a role. However, other elements involved in the relationship between supply and demand may do much to explain the greater than expected housing burden at the 50% level. A shortage of affordable housing is often a negative byproduct of other desirable changes to a city, such as the combination of population and income growth.

Conclusions

The empirical results indicate that state policy may play a role in cities' over- or under-performance on certain indicators of well-being, though that role can be dwarfed by economic change and restructuring, demographic changes, and other stronger forces. Looking at the income indicator, Aurora may have benefited from state policies, such as transportation decisions, that the city took advantage of to attract higher-income residents. The decrease in Lansing's residents' income was driven primarily by the decline in the auto industry, though state actions involving taxes, revenue sharing, and education may have either exacerbated or improved the city's situation.

Population growth reflects a similar finding. The over-performing cities, Charlotte and Durham, seem to have benefited from state strategies promoting economic growth, though city policies and leadership clearly played an important role. Pittsburgh, like Lansing, was unable to overcome the economic challenges posed by its loss of manufacturing. Again, state policies may have been able to better assist the city in addressing its fiscal difficulties, but it is unlikely that they could have offset them.

Housing affordability is driven by market forces. The state can impact the supply – restricting it as Oregon has through its growth management law and California through Proposition 13, or increasing it, as California's TIF set-aside requirement does. State policy is more limited in its ability to affect demand, except as the state supports economic growth and gives cities the fiscal flexibility to meet their residents' needs and provide amenities.

While we found that state policy impacts the well-being of cities, it is only one of many factors; city heritage, political culture, idiosyncrasies are among some of the other influences.

TABLE 1: Indicators of city performance

All variables are measured using the change in well-being from 1990-2000, and all are city-level variables unless otherwise noted.

Variable	Definition
Population	Total number of residents[1]
Percent with some college	Percent of residents aged 25+ with at least some college[1]
Jobs by place of residence	Total number of employed residents[1]
Jobs by place of work	Total number of jobs in cities' MSA[2]
Vacancy rate	Vacant units as a percent of total units[1]
Building permits	Number of building permits issued over the preceding 10 years[3]
In-migration	Number of residents aged 5+ who are in-migrants over the preceding 5 years[4]
Racial segregation	Black-white and Hispanic-white dissimilarity and exposure indices[5]
Per capita income	Income per capita[4]
Median household income	Median household income[1]
Poverty rate	Individuals in poverty as a percent of total residents[1]
Unemployment rate	Percent of labor force that is unemployed[1]
Labor force participation rate	Percent of residents aged 16+ who are in the labor force[1]
Homeownership rate	Owner-occupied units as a percent of total occupied units[1]
Median home value	Median value of owner-occupied units[1]
Median rent	Median gross rent[1]
Concentrated poverty	Percent of all residents living in high-poverty neighborhoods; percent of poor residents living in high-poverty neighborhoods[6]
Housing affordability	Percent of residents spending at least 30% and more than 50% of income on housing[4]
Murder rate	Number of murders per 10,000 residents[7]
Larceny rate	Number of larcenies per 10,000 residents[7]
Income inequality	Ratio of number of households with more than $75,000 in income to the number of households living in poverty[4]
Young adults with no high school degree	Percent of residents aged 18-24 without a high school degree or equivalent

Sources: [1] State of the Cities Data Sets, 1990 and 2000 Census data; [2] Bureau of Economic Analysis; [3] Census: Manufacturing, Mining, and Construction Statistics; [4] 1990 and 2000 Census; [5]Mumford Center; [6]Provided by Paul Jargowsky, tabulations based on 1990 and 2000 Census data; [7]Uniform Crime Reports, CJIS.

TABLE 2: Rotated factor loadings[1]

All variables reflect changes in value between 1990 and 2000. Shaded cells represent highly-loading variables, which are those above 0.55.

	Common Factors			
Variable	1	2	3	Uniqueness
Population	0.00157	0.95858	0.07211	0.06558
Percent with some college	0.61275	-0.21230	0.00499	0.57002
Vacancy rate	0.00912	-0.35727	0.35298	0.68028
Median household income	0.82189	0.35531	-0.19806	0.13458
Poverty rate	-0.59665	-0.13368	0.30279	0.19878
Jobs by place of residence	0.31968	0.88310	0.00731	0.11713
Unemployment rate	-0.19264	0.01296	0.52431	0.61957
Labor force participation rate	0.65861	-0.13472	0.06456	0.52032
Median rent	0.69489	0.32723	0.27127	0.32646
Median home value	0.76642	0.22037	0.17385	0.31913
Homeownership rate	0.14390	0.54530	-0.22790	0.61665
Per capita income	0.88206	0.11188	-0.12316	0.18623
Young adults with no high school degree	0.04495	0.14872	0.04058	0.87239
Jobs by MSA	0.33736	0.65334	0.04583	0.41065
Housing affordability 50%	-0.12703	0.06408	0.79790	0.24643
Housing affordability 30%	0.07090	0.02035	0.89683	0.17922
In-migration	0.43782	-0.30312	0.19272	0.66584
Black/White dissimilarity index	-0.10099	0.17616	-0.20943	0.86885
Black/White exposure index	0.37236	-0.22014	0.16380	0.60581
Hispanic/White dissimilarity index	0.22533	0.15241	-0.00475	0.39779
Hispanic/White exposure index	0.16200	-0.07122	0.01320	0.34310
Income inequality ratio	0.30456	0.38333	-0.20893	0.56340
Murder rate	0.01758	0.12861	0.15100	0.94006
Larceny rate	0.14989	-0.16059	0.19277	0.91308
Building permits	0.24560	0.09994	0.14330	0.85626
Percent of residents in high poverty neighborhoods	-0.15090	-0.05452	0.16347	0.12647
Percent of poor in high poverty neighborhoods	-0.11093	0.06279	0.07505	0.16630
Eigenvalue	5.65883	3.42507	2.67161	
% of variance	33.11	20.04	15.63	
Total variance	33.11	53.15	68.78	

[1] Three factors were retained, all with eigenvalues greater than 1. Varimax rotation was used to orthogonally rotate the factors.

TABLE 3: Independent variables used in linear regression models

Dependent variables are the set of three factor scores. Most variables represent both level in 1990 and change between 1990 and 2000.

Variable	Definition
Percent manufacturing	Percent of the labor force working in the manufacturing industry[1]
Percent FIRE	Percent of the labor force working in the finance, insurance, and real estate industries[1]
Dependent population	Percent of residents aged 16 and younger or 65 and over[1]
Average July temperature	Average July temperature[2]
Annexed population	Population annexed 1991-2000 as a percent of total 1990 population[3]
Percent Black	Percent of residents who are Black, non-Hispanic[1]
Percent Hispanic	Percent of residents who are Hispanic[1]
College enrollment	Number of students enrolled in cities' 4-year institutions as a percent of total population[4]
Average wage	Average wage and salary disbursements per job, MSA level[5]
City age	Years in 1990 since city passed 50,000 in population[6]
Capital dummy variable	1= City is state capital
Regional dummy variables	Dummy variables for region state is in

Sources: [1] State of the Cities Data System, 1990 and 2000 Census data; [2] Federal Research Division of the Library of Congress; [3] Census Boundary and Annexation Survey; [4] Integrated Postsecondary Education Data System; [5]Bureau of Economic Analysis; [6]Census data 1890-1990.

TABLE 4: Variables used in the second set of predictive linear regressions.

Independent variables	Dependent variables (change 1990-2000)						
	Percent change in per capita income	Percent change in median household income	Percentage-point change in poverty rate	Percent change in population	Percent change in total employment	Percentage-point change in housing affordability (30%)	Percentage-point change in housing affordability (50%)
Path dependency variable	Level 1990	Level 1990	Level 1990	Change 1980-1990	Change 1980-1990	Level 1990	Level 1990
Change in % manufacturing 90-00	X	X	X	X	X	X	X
Change in % FIRE 90-00	X	X	X	X	X	X	X
Change in % black 90-00	X	X	X	X	X	X	X
Change in % Hispanic 90-00	X	X	X	X	X	X	X
Change in % aged 65 and over 90-00	X	X	X	X	X	X	X
Change in % aged 17 and under 90-00	X	X	X	X	X	X	X
Percent with college degree 1990[1]	X	X	X	X	X	X	X
Natural log of 1990 GMP[2]	X	X	X	X	X	X	X
Change in GMP per job 90-00[2]	X	X	X	X	X	X	X
Average July temperature	X	X	X	X	X	X	X
State capital (dummy)	X	X	X	X	X	X	X
Region (dummies, reference group=Middle Atlantic)	X	X	X	X	X	X	X
City age 1990	X	X	X	X	X	X	X
Annexed population 90-00	X	X	X	X	X	X	X
College enrollment 1990	X	X	X	X	X	X	X
Change in employment rate 90-00[3]	X	X	X	X		X	X
Change in % non-English speaking 90-00	X	X	X	X	X	X	X
Change in % foreign-born 90-00[1]	X	X	X	X	X	X	X
Percent in-migrants 1995-2000[3]				X	X	X	X
Natural log of population 1990 (w/ 2nd derivative)[1]				X			
Natural log of employment 1990 (w/ 2nd derivative)[1]					X		

Sources: [1] State of the Cities Data System, Census data 1990 and 2000; [2] Economy.com; [3] U.S. Census 1990 and 2000.

TABLE 5: Residual values and rankings for the case study cities by hypothesis

Per Capita Income

City	State	Rank	Actual Value	Predicted Value
Aurora	IL	1	22,131	19,025
Chicago	IL	29	20,175	18,893
Charlotte	NC	19	26,823	24,956
Durham	NC	92	22,526	22,007
Grand Rapids	MI	257	17,661	18,294
Lansing	MI	243	17,924	18,490
Philadelphia	PA	241	16,509	17,025
Pittsburgh	PA	221	18,816	19,247
Portland	OR	112	22,643	22,303
Sacramento	CA	299	18,721	19,965
San Francisco	CA	5	34,556	30,781
Seattle	WA	21	30,306	28,313
Tacoma	WA	77	19,130	18,548

Population

City	State	Rank	Actual Value	Predicted Value
Aurora	IL	6	142,990	118,403
Chicago	IL	128	2,896,016	2,882,602
Charlotte	NC	18	540,828	488,108
Durham	NC	15	187,035	166,359
Grand Rapids	MI	121	197,800	195,883
Lansing	MI	274	119,128	127,842
Philadelphia	PA	117	1,517,550	1,495,741
Pittsburgh	PA	259	334,563	355,546
Portland	OR	53	529,121	502,343
Sacramento	CA	311	407,018	452,444
San Francisco	CA	46	776,733	724,057
Seattle	WA	113	563,374	553,508
Tacoma	WA	101	193,556	188,958

Housing Affordability 30%

City	State	Rank	Actual Value	Predicted Value
Aurora	IL	277	29.22	27.19
Chicago	IL	149	36.32	36.61
Charlotte	NC	170	28.71	28.70
Durham	NC	117	32.02	32.79
Grand Rapids	MI	12	26.21	29.49
Lansing	MI	104	27.36	28.39
Philadelphia	PA	110	34.09	34.98
Pittsburgh	PA	135	32.78	33.28
Portland	OR	281	34.95	32.81
Sacramento	CA	101	36.54	37.62
San Francisco	CA	4	35.22	39.30
Seattle	WA	255	35.09	33.64
Tacoma	WA	304	36.74	33.61

Housing Affordability 50%

City	State	Rank	Actual Value	Predicted Value
Aurora	IL	174	9.38	9.35
Chicago	IL	156	17.76	17.86
Charlotte	NC	54	11.35	12.43
Durham	NC	112	13.9	14.35
Grand Rapids	MI	51	11.4	12.55
Lansing	MI	47	12.11	13.29
Philadelphia	PA	161	17.72	17.79
Pittsburgh	PA	245	16.28	15.63
Portland	OR	234	14.37	13.81
Sacramento	CA	107	16.37	16.88
San Francisco	CA	18	15.77	17.62
Seattle	WA	157	14.25	14.35
Tacoma	WA	289	15.72	14.21