**GWIPP WORKING PAPER SERIES**

# STATE POLICY EFFECTS ON URBAN PERFORMANCE

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Working Paper Number #016

http://www.gwu.edu/~gwipp/papers/wp016

**April 2005**

George Washington Institute of Public Policy (GWIPP)
The George Washington University
805 21st St. NW
Washington, DC 2005

Funded by the Fannie Mae Foundation

Presented at the 2005 annual meeting of the Urban Affairs Association in Salt Lake City, Utah
April 16, 2005

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## Introduction

Cities are creatures of their state governments. As such, state policy can have important effects, intended or otherwise, on the well-being of cities and their residents. States affect cities in a variety of ways, and the importance to local governments of the state government role has long been recognized. States determine the institutional forms of their local governments, the land use and regulatory frameworks under which they operate, and the revenue systems they may use. Cities and their residents are directly affected by state tax policies and by state programs and policies. While some states have explicit "urban policies" directed at promoting the well-being of their cities, in every state cities are affected, adversely or beneficially, by a range of state activities not necessarily devised with cities and their residents in mind.

This paper describes the initial stages in a research project that attempts to tease out how state policy effects the performance of cities. We first use factor analysis to explore the performance of central cities between 1990 and 2000 by measuring changes in a set of measures meant to broadly capture the economic and social well-being of city residents. We then employ linear regression to predict cities' factor scores using a set of non-policy variables that describe the demographic characteristics and economic structures of the cities. By explaining performance using non-policy variables in this way, we attempt to isolate the potential impact of policy on performance, which should be captured in the unexplained variation in the cities' factor scores. In the final part of our statistical analysis, we estimate how much of the unexplained variation can be attributed to state-level factors by using state fixed-effects models to predict the residuals from the previous stage regressions.

The next stage in our research will be to use the state-fixed effects models as guides in choosing states for case study research. We will conduct a series of intensive case studies in

both well- and poorly-performing states in order to determine how and why state-level policy affects the well-being of cities within those states.

## Methods and Results

*Factor Analysis*

The purpose of our statistical analysis is to determine how much of the variation in city performance could potentially be due to differences in state policies. We therefore must first measure urban performance, broadly construed as the change in a broad array of economic and social indicators of the well-being of city residents. We use factor analysis to determine how these indicators vary in relation to one another and find that city performance can be evaluated in terms of categories of indicators (factors). Within these categories, the indicators are highly related to one another, but the categories themselves are statistically and intuitively distinct from one another.

Our population of cities includes all central cities with populations of more than 50,000 in 1990 (n=325).[1] We collected data on 27 indicators of the economic and social well-being of city residents. These include measures of income (per capita and median household), educational attainment, crime rates (both murder and larceny rates), housing costs (median home values and rents as well as housing affordability), racial and economic segregation, poverty (rates and concentration), and employment. (See Table 1 for a list of indicators and their definitions.) We are interested in the *change in* city performance, so all the indicators measure change from 1990 to 2000.

[1] There was at least one central city of this size in every state except Vermont.

Factor analysis is used in order to condense our indicators of city and residential well-being into categories representing broad areas of performance. Four factors were retained, with eigenvalues ranging from 5.66 to 1.43. (See Table 2 for rotated factor loadings and eigenvalues.) The four factors and their highly-loading variables[2] are:

Factor 1: Income and Education

- Percent with some college
- Median household income
- Per capita income
- Poverty rate
- Labor force participation rate
- Median rent
- Median home value

Factor 2: Population and Employment

- Population
- Jobs by place of residence
- Jobs by place of work

Factor 3: Housing Affordability

- Percent of households spending 30% or more of income on housing
- Percent of households spending 50% or more of income on housing

Factor 4: Concentrated Poverty

- Poverty rate
- Percent of all residents living in high-poverty neighborhoods

[2] Variables considered highly-loading are those with factor loadings of at least ±0.55.

- Percent of poor residents living in high-poverty neighborhoods

The factor that explained the largest proportion of the variance among the indicators (33%) was that most related to income and education. The four factors cumulatively explained more than 77% of the total variance (see Table 2). We created new variables representing city performance in each of the preceding categories by using the factor scores for each factor. (See Table 3 for city rankings on each factor.)

*Predicting the Factor Scores*

We then estimate how much of the variation in the categories of urban performance can be attributed to public policy by using linear regression to explain the portion of the variation that can*not* be attributed to policy (or at least recent policy). A set of non-policy variables measuring the social and economic structures of cities is used to predict performance in each of the four categories. We then assume that the variation in performance that was not explained by the non-policy variables is the maximum portion of the variation that *could* be due to differences in policy.

Our predictive models of performance used the factors scores as dependent variables, and a set of variables measuring changes in cities' social and economic structures were the independent variables. The economic structure variables include the percent of the labor force that is working in the manufacturing industry as well as the percent in the finance, real estate, and insurance industries. Social structure and demographic variables include the percent of residents who are of working age, the percent who are enrolled in four-year colleges and universities, and the percent who are black (non-Hispanic) or Hispanic. (See Table 4 for a list of

independent variables.) We control for city characteristics at the beginning of the study period by including measures of these characteristics in 1990 in addition to the change from 1990 to 2000. Also included are controls for cities' climate (average July temperature), for whether or not the cities are state capitals, and for the geographic region of cities. (See Table 5 for the definition of the regions used in the analysis.) We thus attempt to explain as much of the variation in the factor scores as possible using this set of non-policy variables. The remaining, or unexplained, portion of the variation is the maximum portion which might be attributed to policy at the national, state, or city levels.

The four predictive models explain a significant amount of the variance in the factor scores, signifying that much of what effects city performance is unrelated to public policy. This is particularly true of the models of the Income and Education factor and the Population and Employment factor, in which 66 percent and 56 percent, respectively, of the variation in the factor scores is explained by the non-policy variables. The least predictive of the four models is that of the Housing Affordability factor, but the model's independent variables still explain a respectable 27 percent of the variance in factor scores. The model explained 34 percent of the variance in the Concentrated Poverty factor scores. Because these regression models are predictive, as opposed to causal, the coefficients on and significance of the independent variables is less important than the models' Adjusted-$R^2$s. However, the four models do suggest some interesting causal relationships that may be explored in the future. (See Tables 6 through 9 for the results of the linear regressions.)

*State Fixed-Effects Models*

As we are primarily interested in those policies that differ at the state level, we use state fixed-effects models to separate state-level policy effects from those that may occur at the national or city levels. In the final part of our statistical analysis, we regress the residuals from the four predictive models against a set of state dummy variables. For this, we used only cities that were in states with at least three central cities. This left us with 34 states[3] 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 constant term was suppressed in the regressions in order to eliminate the need to leave out one of the state dummy variables as a reference group.) The state dummy variables with significant coefficients are those in which state-level policy could have played a significant role in the performance of their cities between 1990 and 2000. (See Tables 10 through 13 for the fixed-effects regression results.)

Using a statistical significance threshold of 0.1, there were seven significant state dummy coefficients when using the residuals from the Income and Education factor score model, five for the Population and Employment factor, ten for Housing Affordability, and nine for Concentrated Poverty. (See Table 14.) The low Adjusted-$R^2$s suggest that most of the variation among states is not explained by state policy (or other state-level effects).

The performance of cities in Colorado, Illinois, Oregon, and Washington exceeded expectations on the Income and Education factor, while California, Michigan, and Pennsylvania under-performed on this factor. On the Population and Employment factor, Illinois, North Carolina, and Oregon performed well while Pennsylvania and Virginia performed more poorly than expected. The interpretation of the Housing Affordability factor is trickier: a positive sign

[3] 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.

on the state dummy coefficients is related to housing being less affordable in those states. While a lack of affordable housing can be bad for city residents, it is also often a sign of a vibrant, competitive city. Alabama, New Mexico, North Carolina, Pennsylvania, and Washington all had positive, significant coefficients in the Housing Affordability model, meaning cities in those states saw a greater decrease (or smaller increase) in housing affordability than was expected. Cities in California, Kansas, Louisiana, Michigan, and Wisconsin saw a larger increase (or smaller decrease) in housing affordability than the model predicted. On the Concentrated Poverty factor, a positive sign on the state dummy coefficients indicates an increase in poverty concentration. Arizona, California, Indiana, New Mexico, and Rhode Island performed worse than was expected on this factor, while Michigan, Ohio, Texas, and Washington performed better than the model predicted.

*Selection of case studies*

We selected eight states in which to conduct case studies. Concentrating primarily on the Income and Education, Population and Employment, and Housing Affordability factors, seven states were selected that had significant coefficients on at least two of these three models. These states are:

- California (better than expected performance on Housing Affordability; worse than expected on Income and Education);
- Illinois (better than expected on both Income and Education, and Population and Employment);
- Michigan (better than expected on Housing Affordability; worse than expected on Income and Education);

- North Carolina (better than expected on Population and Employment; worse than expected on Housing Affordability);
- Oregon (better than expected on both Income and Education, and Population and Employment);
- Pennsylvania (worse than expected on Income and Education, Population and Employment, and Housing Affordability); and
- Washington (better than expected on Income and Education; worse than expected on Housing Affordability).

We also looked at lists of cities by state for each set of residuals to see whether some states would have been significant if not for one or two outlier cities. We found that an eighth state, Virginia, in addition to having a significant coefficient (worse than expected) in the Population and Employment factor, also performed poorly on Income and Education and well on Housing Affordability but were not found to be significant due to outliers (Suffolk and Danville on the former, Danville and Roanoke on the latter). We therefore intend to include Virginia in our case studies.

The case studies will focus on policy that was likely to have an effect on city performance during the period from 1990 to 2000[4] and will consist of both document searches and interviews. The interviews will be conducted with state and city policymakers as well as close observers such as journalists, academics, and other informed observers.

[4] It is important to note that such policies could have been enacted well before the time period in question.

**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 | Variable label | Definition |
|---|---|---|
| Population | chgpop | Total number of residents[1] |
| Percent with some college | chgsomecoll | Percent of residents aged 25+ with at least some college[1] |
| Jobs by place of residence | chgemployed | Total number of employed residents[1] |
| Jobs by place of work | chgjobsmsa | Total number of jobs in cities' MSA[2] |
| Vacancy rate | chgvacrate | Vacant units as a percent of total units[1] |
| Building permits | chgpermits | Number of building permits issued over the preceding 10 years[3] |
| In-migration | chginmig | Number of residents aged 5+ who are in-migrants over the preceding 5 years[4] |
| Racial segregation | chgbwdissim, chgbwexps, chghwdissim, chghwexps | Black-white and Hispanic-white dissimilarity and exposure indices[5] |
| Per capita income | chgpercap | Income per capita[4] |
| Median household income | chgmedhh | Median household income[1] |
| Poverty rate | chgpovrate | Individuals in poverty as a percent of total residents[1] |
| Unemployment rate | chgunemp | Percent of labor force that is unemployed[1] |
| Labor force participation rate | chglabfrc | Percent of residents aged 16+ who are in the labor force[1] |
| Homeownership rate | chgownrate | Owner-occupied units as a percent of total occupied units[1] |
| Median home value | chghmval | Median value of owner-occupied units[1] |
| Median rent | chgrent | Median gross rent[1] |
| Concentrated poverty | chgtothpn, chgpoorhpn | Percent of all residents living in high-poverty neighborhoods; percent of poor residents living in high-poverty neighborhoods[6] |
| Housing affordability | chgafford50, chgafford30 | Percent of residents spending at least 30% and more than 50% of income on housing[4] |
| Murder rate | chgmurder | Number of murders per 10,000 residents[7] |
| Larceny rate | chglarceny | Number of larcenies per 10,000 residents[7] |
| Income inequality | chgincratio | 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 | chgythnhsd | 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**[5]

*See Table 1 for variable labels.*

*Shaded cells represent highly-loading variables, or those above 0.55.*

| | Common Factors | | | | |
|---|---|---|---|---|---|
| Variable | 1 | 2 | 3 | 4 | Uniqueness |
| chgpop | 0.00157 | 0.95858 | 0.07211 | 0.06241 | 0.06558 |
| chgsomecoll | 0.61275 | -0.21230 | 0.00499 | -0.00038 | 0.57002 |
| chgvacrate | 0.00912 | -0.35727 | 0.35298 | -0.08732 | 0.68028 |
| chgmedhh | 0.82189 | 0.35531 | -0.19806 | -0.14596 | 0.13458 |
| chgpovrate | -0.59665 | -0.13368 | 0.30279 | 0.55558 | 0.19878 |
| chgemployed | 0.31968 | 0.88310 | 0.00731 | -0.02593 | 0.11713 |
| chgunemp | -0.19264 | 0.01296 | 0.52431 | 0.20773 | 0.61957 |
| chglabfrc | 0.65861 | -0.13472 | 0.06456 | -0.13799 | 0.52032 |
| chgrent | 0.69489 | 0.32723 | 0.27127 | -0.05577 | 0.32646 |
| chghmval | 0.76642 | 0.22037 | 0.17385 | -0.12120 | 0.31913 |
| chgownrate | 0.14390 | 0.54530 | -0.22790 | -0.10660 | 0.61665 |
| chgpercap | 0.88206 | 0.11188 | -0.12316 | -0.08972 | 0.18623 |
| chgythnhsd | 0.04495 | 0.14872 | 0.04058 | 0.12642 | 0.87239 |
| chgjobsmsa | 0.33736 | 0.65334 | 0.04583 | -0.09444 | 0.41065 |
| chgafford50 | -0.12703 | 0.06408 | 0.79790 | 0.30393 | 0.24643 |
| chgafford30 | 0.07090 | 0.02035 | 0.89683 | 0.05705 | 0.17922 |
| chginmig | 0.43782 | -0.30312 | 0.19272 | -0.09016 | 0.66584 |
| chgbwdissim | -0.10099 | 0.17616 | -0.20943 | 0.14032 | 0.86885 |
| chgbwexps | 0.37236 | -0.22014 | 0.16380 | -0.34501 | 0.60581 |
| chghwdissim | 0.22533 | 0.15241 | -0.00475 | 0.03414 | 0.39779 |
| chghwexps | 0.16200 | -0.07122 | 0.01320 | 0.06270 | 0.34310 |
| chgincratio | 0.30456 | 0.38333 | -0.20893 | 0.37245 | 0.56340 |
| chgmurder | 0.01758 | 0.12861 | 0.15100 | 0.12110 | 0.94006 |
| chglarceny | 0.14989 | -0.16059 | 0.19277 | -0.03851 | 0.91308 |
| chgpermits | 0.24560 | 0.09994 | 0.14330 | -0.12699 | 0.85626 |
| chgtothpn | -0.15090 | -0.05452 | 0.16347 | 0.90611 | 0.12647 |
| chgpoorhpn | -0.11093 | 0.06279 | 0.07505 | 0.89881 | 0.16630 |
| | | | | | |
| Eigenvalue | 5.65883 | 3.42507 | 2.67161 | 1.43216 | |
| % of variance | 33.11 | 20.04 | 15.63 | 8.38 | |
| Total variance | 33.11 | 53.15 | 68.78 | 77.15 | |

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

**TABLE 3: City rankings on factor scores**
*Cities are ranked from best- to worst-performing.*[6]

| City | State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|---|
| Abilene | TX | 252 | 126 | 95 | 184 |
| Akron | OH | 79 | 236 | 207 | 42 |
| Alameda | CA | 133 | 239 | 28 | 321 |
| Albany | GA | 217 | 233 | 198 | 67 |
| Albany | NY | 283 | 315 | 317 | 191 |
| Albuquerque | NM | 156 | 79 | 176 | 231 |
| Allentown | PA | 295 | 242 | 296 | 307 |
| Altoona | PA | 96 | 281 | 248 | 208 |
| Amarillo | TX | 161 | 125 | 87 | 99 |
| Anaheim | CA | 324 | 53 | 156 | 159 |
| Anchorage | AK | 292 | 65 | 46 | 213 |
| Anderson | IN | 54 | 234 | 153 | 148 |
| Ann Arbor | MI | 201 | 145 | 37 | 207 |
| Appleton | WI | 72 | 160 | 31 | 294 |
| Arlington | TX | 282 | 34 | 106 | 187 |
| Arlington CDP | VA | 196 | 152 | 16 | 283 |
| Asheville | NC | 22 | 133 | 306 | 297 |
| Atlanta | GA | 15 | 182 | 113 | 137 |
| Aurora | IL | 17 | 18 | 197 | 192 |
| Austin | TX | 11 | 8 | 42 | 223 |
| Bakersfield | CA | 317 | 13 | 242 | 200 |
| Baltimore | MD | 248 | 321 | 279 | 94 |
| Baton Rouge | LA | 158 | 197 | 117 | 41 |
| Battle Creek | MI | 139 | 200 | 15 | 46 |
| Bayonne | NJ | 258 | 265 | 299 | 175 |
| Baytown | TX | 259 | 129 | 85 | 218 |
| Beaumont | TX | 216 | 228 | 134 | 28 |
| Bellevue | WA | 157 | 43 | 237 | 253 |
| Bellingham | WA | 185 | 48 | 325 | 144 |
| Berkeley | CA | 16 | 217 | 290 | 324 |
| Bethlehem | PA | 237 | 277 | 302 | 177 |
| Billings | MT | 131 | 113 | 112 | 165 |
| Binghamton | NY | 264 | 322 | 127 | 279 |
| Birmingham | AL | 115 | 303 | 252 | 93 |
| Bloomington | IL | 19 | 49 | 129 | 268 |
| Bloomington | IN | 51 | 101 | 191 | 314 |
| Boca Raton | FL | 153 | 76 | 110 | 288 |
| Boise City | ID | 103 | 6 | 297 | 179 |
| Bossier City | LA | 145 | 153 | 14 | 309 |
| Boston | MA | 197 | 213 | 32 | 241 |
| Boulder | CO | 36 | 73 | 235 | 254 |
| Bridgeport | CT | 305 | 257 | 36 | 139 |
| Brockton | MA | 298 | 215 | 8 | 281 |
| Brownsville | TX | 224 | 7 | 148 | 4 |

[6] On Housing Affordability, a decrease in the availability of affordable housing is assumed to be bad. However, it must be noted that an alternative interpretation of the lack of affordable housing is that it is a sign of a competitive, vibrant city.

**TABLE 3: City rankings on factor scores (continued)**

| City | State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|---|
| Bryan | TX | 263 | 52 | 249 | 43 |
| Buffalo | NY | 189 | 320 | 229 | 134 |
| Cambridge | MA | 47 | 156 | 315 | 269 |
| Camden | NJ | 254 | 313 | 175 | 25 |
| Canton | OH | 34 | 258 | 158 | 102 |
| Cape Coral | FL | 214 | 16 | 192 | 239 |
| Cedar Rapids | IA | 93 | 137 | 137 | 142 |
| Champaign | IL | 175 | 178 | 97 | 126 |
| Charleston | SC | 76 | 91 | 289 | 54 |
| Charleston | WV | 38 | 275 | 196 | 133 |
| Charlotte | NC | 74 | 38 | 281 | 57 |
| Chattanooga | TN | 49 | 260 | 201 | 170 |
| Cheyenne | WY | 137 | 140 | 91 | 230 |
| Chicago | IL | 99 | 191 | 74 | 81 |
| Cincinnati | OH | 70 | 307 | 171 | 88 |
| Clarksville | TN | 172 | 19 | 200 | 87 |
| Clearwater | FL | 162 | 173 | 225 | 190 |
| Cleveland | OH | 40 | 294 | 145 | 89 |
| College Station | TX | 64 | 31 | 164 | 304 |
| Colorado Springs | CO | 35 | 23 | 84 | 259 |
| Columbia | MO | 63 | 58 | 179 | 64 |
| Columbia | SC | 199 | 95 | 307 | 63 |
| Columbus | GA | 114 | 186 | 116 | 98 |
| Columbus | OH | 85 | 131 | 241 | 53 |
| Corpus Christi | TX | 140 | 118 | 119 | 82 |
| Council Bluffs | IA | 27 | 192 | 250 | 247 |
| Dallas | TX | 274 | 69 | 194 | 68 |
| Danbury | CT | 302 | 111 | 50 | 222 |
| Danville | VA | 155 | 299 | 314 | 110 |
| Davenport | IA | 109 | 181 | 103 | 91 |
| Dayton | OH | 116 | 288 | 187 | 14 |
| Daytona Beach | FL | 210 | 223 | 212 | 34 |
| Dearborn | MI | 271 | 146 | 323 | 153 |
| Decatur | IL | 166 | 273 | 219 | 284 |
| Denton | TX | 136 | 41 | 35 | 11 |
| Denver | CO | 25 | 61 | 173 | 97 |
| Des Moines | IA | 147 | 212 | 120 | 85 |
| Detroit | MI | 69 | 224 | 6 | 3 |
| Dothan | AL | 230 | 147 | 125 | 7 |
| Dubuque | IA | 65 | 244 | 170 | 233 |
| Duluth | MN | 33 | 220 | 230 | 198 |
| Durham | NC | 83 | 30 | 238 | 150 |
| East Lansing | MI | 205 | 311 | 319 | 317 |
| Eau Claire | WI | 20 | 136 | 51 | 115 |
| El Paso | TX | 241 | 99 | 165 | 66 |
| Elgin | IL | 132 | 47 | 226 | 295 |
| Elyria | OH | 44 | 240 | 224 | 164 |
| Erie | PA | 221 | 269 | 292 | 30 |
| Escondido | CA | 318 | 50 | 34 | 221 |
| Eugene | OR | 95 | 51 | 310 | 104 |

**TABLE 3: City rankings on factor scores (continued)**

| City | State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|---|
| Evanston | IL | 123 | 261 | 266 | 313 |
| Evansville | IN | 105 | 289 | 131 | 160 |
| Everett | WA | 87 | 39 | 308 | 212 |
| Fairfield | CA | 234 | 45 | 132 | 290 |
| Fall River | MA | 236 | 271 | 19 | 258 |
| Fargo | ND | 128 | 59 | 39 | 132 |
| Fayetteville | NC | 167 | 4 | 256 | 35 |
| Flint | MI | 218 | 231 | 4 | 13 |
| Fort Collins | CO | 3 | 12 | 57 | 302 |
| Fort Lauderdale | FL | 176 | 199 | 90 | 275 |
| Fort Smith | AR | 211 | 149 | 231 | 131 |
| Fort Wayne | IN | 174 | 87 | 221 | 141 |
| Fort Worth | TX | 229 | 74 | 128 | 83 |
| Fresno | CA | 294 | 71 | 253 | 211 |
| Gainesville | FL | 242 | 97 | 293 | 18 |
| Galveston | TX | 148 | 230 | 185 | 121 |
| Gary | IN | 52 | 310 | 83 | 257 |
| Gastonia | NC | 90 | 96 | 316 | 215 |
| Grand Rapids | MI | 121 | 210 | 60 | 163 |
| Great Falls | MT | 146 | 187 | 154 | 118 |
| Greeley | CO | 92 | 27 | 277 | 59 |
| Green Bay | WI | 78 | 158 | 68 | 224 |
| Greensboro | NC | 207 | 103 | 257 | 95 |
| Greenville | SC | 50 | 276 | 282 | 143 |
| Hamilton | OH | 31 | 245 | 104 | 10 |
| Hampton | VA | 232 | 161 | 143 | 242 |
| Harrisburg | PA | 164 | 296 | 278 | 234 |
| Hartford | CT | 321 | 314 | 217 | 79 |
| High Point | NC | 21 | 109 | 133 | 267 |
| Honolulu CDP | HI | 301 | 209 | 300 | 189 |
| Houston | TX | 261 | 56 | 126 | 55 |
| Huntington | WV | 144 | 305 | 311 | 185 |
| Huntsville | AL | 250 | 232 | 183 | 161 |
| Indianapolis | IN | 111 | 193 | 262 | 111 |
| Iowa City | IA | 107 | 135 | 267 | 229 |
| Irvine | CA | 312 | 37 | 115 | 265 |
| Irving | TX | 256 | 40 | 72 | 251 |
| Jackson | MS | 255 | 304 | 177 | 31 |
| Jacksonville | FL | 141 | 104 | 142 | 136 |
| Janesville | WI | 57 | 92 | 109 | 272 |
| Jersey City | NJ | 233 | 243 | 76 | 188 |
| Joliet | IL | 37 | 22 | 202 | 92 |
| Kalamazoo | MI | 180 | 262 | 203 | 21 |
| Kansas City | KS | 125 | 274 | 69 | 107 |
| Kansas City | MO | 118 | 237 | 178 | 135 |
| Kenosha | WI | 14 | 124 | 157 | 248 |
| Killeen | TX | 73 | 17 | 12 | 270 |
| Knoxville | TN | 106 | 202 | 285 | 193 |
| La Crosse | WI | 61 | 205 | 45 | 225 |
| Lafayette | LA | 67 | 63 | 58 | 9 |

**TABLE 3: City rankings on factor scores (continued)**

| City | State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|---|
| Lake Charles | LA | 98 | 207 | 82 | 17 |
| Lakeland | FL | 190 | 155 | 223 | 186 |
| Lancaster | CA | 325 | 78 | 295 | 282 |
| Lancaster | PA | 253 | 218 | 288 | 77 |
| Lansing | MI | 209 | 259 | 44 | 60 |
| Laredo | TX | 183 | 5 | 239 | 2 |
| Las Cruces | NM | 260 | 66 | 210 | 264 |
| Las Vegas | NV | 270 | 1 | 280 | 100 |
| Lawrence | KS | 23 | 60 | 21 | 149 |
| Lawrence | MA | 309 | 175 | 2 | 16 |
| Lawton | OK | 188 | 120 | 70 | 201 |
| Lexington-Fayette | KY | 71 | 122 | 182 | 236 |
| Lincoln | NE | 81 | 88 | 195 | 183 |
| Little Rock | AR | 127 | 203 | 100 | 171 |
| Lodi | CA | 288 | 148 | 286 | 205 |
| Long Beach | CA | 320 | 179 | 121 | 320 |
| Longmont | CO | 4 | 15 | 270 | 299 |
| Longview | TX | 231 | 183 | 166 | 86 |
| Lorain | OH | 62 | 266 | 135 | 155 |
| Los Angeles | CA | 311 | 198 | 146 | 255 |
| Louisville | KY | 24 | 302 | 254 | 249 |
| Lowell | MA | 275 | 195 | 5 | 49 |
| Lubbock | TX | 245 | 138 | 139 | 39 |
| Lynchburg | VA | 163 | 248 | 247 | 56 |
| Lynn | MA | 290 | 169 | 7 | 125 |
| Macon | GA | 246 | 300 | 216 | 124 |
| Madison | WI | 89 | 128 | 190 | 157 |
| Manchester | NH | 257 | 184 | 18 | 300 |
| Mansfield | OH | 150 | 227 | 240 | 58 |
| McAllen | TX | 198 | 20 | 159 | 1 |
| Melbourne | FL | 219 | 77 | 96 | 174 |
| Memphis | TN | 126 | 185 | 260 | 24 |
| Merced | CA | 314 | 86 | 276 | 70 |
| Meriden | CT | 299 | 282 | 141 | 217 |
| Mesa | AZ | 238 | 11 | 24 | 240 |
| Miami | FL | 235 | 162 | 138 | 75 |
| Miami Beach | FL | 2 | 235 | 3 | 23 |
| Midland | TX | 297 | 117 | 186 | 8 |
| Milwaukee | WI | 206 | 285 | 88 | 27 |
| Minneapolis | MN | 68 | 222 | 54 | 76 |
| Mobile | AL | 152 | 208 | 218 | 80 |
| Modesto | CA | 300 | 89 | 174 | 123 |
| Monroe | LA | 18 | 278 | 23 | 112 |
| Montgomery | AL | 203 | 170 | 233 | 44 |
| Muncie | IN | 88 | 292 | 244 | 244 |
| Napa | CA | 208 | 83 | 41 | 261 |
| Nashua | NH | 277 | 150 | 13 | 280 |
| Nashville-Davidson | TN | 97 | 168 | 245 | 105 |
| New Bedford | MA | 251 | 308 | 30 | 308 |
| New Haven | CT | 307 | 298 | 204 | 292 |

**TABLE 3: City rankings on factor scores (continued)**

| City | State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|---|
| New Orleans | LA | 129 | 216 | 10 | 47 |
| New York | NY | 269 | 139 | 272 | 146 |
| Newark | NJ | 278 | 253 | 227 | 214 |
| Newport News | VA | 225 | 196 | 79 | 276 |
| Niagara Falls | NY | 195 | 318 | 149 | 101 |
| Norfolk | VA | 200 | 312 | 78 | 120 |
| Norman | OK | 120 | 55 | 59 | 286 |
| North Charleston | SC | 306 | 72 | 52 | 169 |
| North Little Rock | AR | 60 | 270 | 111 | 109 |
| Norwalk | CT | 279 | 190 | 150 | 243 |
| Oakland | CA | 130 | 141 | 22 | 210 |
| Odessa | TX | 284 | 154 | 155 | 22 |
| Ogden | UT | 53 | 68 | 318 | 199 |
| Oklahoma City | OK | 202 | 121 | 124 | 113 |
| Olathe | KS | 26 | 9 | 9 | 319 |
| Omaha | NE | 48 | 127 | 147 | 119 |
| Orem | UT | 1 | 21 | 268 | 278 |
| Orlando | FL | 171 | 142 | 172 | 156 |
| Oshkosh | WI | 66 | 93 | 56 | 130 |
| Owensboro | KY | 108 | 188 | 136 | 12 |
| Palm Bay | FL | 310 | 24 | 61 | 180 |
| Palo Alto | CA | 10 | 174 | 107 | 316 |
| Pasadena | CA | 262 | 241 | 73 | 237 |
| Pawtucket | RI | 304 | 264 | 140 | 256 |
| Pensacola | FL | 151 | 204 | 151 | 38 |
| Peoria | IL | 100 | 256 | 243 | 266 |
| Philadelphia | PA | 265 | 297 | 255 | 197 |
| Phoenix | AZ | 266 | 25 | 102 | 158 |
| Pine Bluff | AR | 192 | 272 | 75 | 29 |
| Pittsburgh | PA | 104 | 319 | 228 | 62 |
| Pontiac | MI | 55 | 279 | 66 | 40 |
| Port Arthur | TX | 173 | 252 | 89 | 36 |
| Port St. Lucie | FL | 308 | 2 | 144 | 293 |
| Portland | ME | 168 | 251 | 26 | 145 |
| Portland | OR | 9 | 62 | 312 | 116 |
| Portsmouth | VA | 149 | 287 | 167 | 26 |
| Providence | RI | 291 | 246 | 65 | 322 |
| Provo | UT | 12 | 33 | 162 | 84 |
| Pueblo | CO | 45 | 143 | 236 | 69 |
| Racine | WI | 112 | 238 | 180 | 78 |
| Raleigh | NC | 143 | 35 | 258 | 65 |
| Rapid City | SD | 122 | 110 | 33 | 252 |
| Reading | PA | 296 | 254 | 320 | 306 |
| Redding | CA | 247 | 54 | 264 | 195 |
| Reno | NV | 268 | 26 | 208 | 196 |
| Richmond | VA | 187 | 293 | 214 | 138 |
| Riverside | CA | 315 | 108 | 163 | 273 |
| Roanoke | VA | 138 | 267 | 271 | 162 |
| Rochester | MN | 135 | 70 | 168 | 245 |
| Rochester | NY | 285 | 306 | 251 | 262 |

**TABLE 3: City rankings on factor scores (continued)**

| City | State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|---|
| Rockford | IL | 223 | 164 | 263 | 108 |
| Sacramento | CA | 289 | 114 | 169 | 128 |
| Saginaw | MI | 86 | 249 | 1 | 45 |
| Salem | OR | 39 | 44 | 284 | 246 |
| Salinas | CA | 316 | 10 | 98 | 202 |
| Salt Lake City | UT | 5 | 75 | 298 | 206 |
| San Angelo | TX | 165 | 172 | 38 | 154 |
| San Antonio | TX | 80 | 42 | 40 | 20 |
| San Bernardino | CA | 319 | 107 | 269 | 182 |
| San Buenaventura (Ventura) | CA | 286 | 167 | 62 | 238 |
| San Diego | CA | 244 | 130 | 43 | 289 |
| San Francisco | CA | 6 | 165 | 11 | 301 |
| San Jose | CA | 101 | 84 | 20 | 305 |
| Santa Ana | CA | 323 | 80 | 17 | 147 |
| Santa Barbara | CA | 213 | 177 | 213 | 232 |
| Santa Clara | CA | 29 | 81 | 48 | 325 |
| Santa Fe | NM | 117 | 98 | 291 | 209 |
| Santa Maria | CA | 322 | 36 | 220 | 127 |
| Santa Rosa | CA | 212 | 32 | 49 | 260 |
| Sarasota | FL | 186 | 211 | 259 | 203 |
| Savannah | GA | 142 | 284 | 273 | 103 |
| Schenectady | NY | 273 | 309 | 206 | 312 |
| Scottsdale | AZ | 94 | 3 | 81 | 291 |
| Scranton | PA | 124 | 295 | 199 | 235 |
| Seattle | WA | 7 | 144 | 287 | 228 |
| Shreveport | LA | 159 | 201 | 27 | 52 |
| Sioux City | IA | 59 | 171 | 189 | 72 |
| Sioux Falls | SD | 46 | 64 | 99 | 220 |
| South Bend | IN | 178 | 250 | 283 | 181 |
| Spokane | WA | 58 | 112 | 303 | 114 |
| Springfield | IL | 84 | 180 | 188 | 168 |
| Springfield | MA | 303 | 286 | 93 | 106 |
| Springfield | MO | 134 | 163 | 261 | 71 |
| Springfield | OH | 30 | 291 | 92 | 287 |
| St. Charles | MO | 154 | 116 | 80 | 274 |
| St. Joseph | MO | 41 | 194 | 209 | 74 |
| St. Louis | MO | 102 | 325 | 122 | 178 |
| St. Paul | MN | 110 | 219 | 67 | 129 |
| St. Petersburg | FL | 75 | 225 | 160 | 151 |
| Stamford | CT | 293 | 157 | 309 | 167 |
| Stockton | CA | 272 | 94 | 265 | 173 |
| Suffolk | VA | 13 | 82 | 77 | 216 |
| Sunnyvale | CA | 28 | 115 | 25 | 323 |
| Syracuse | NY | 281 | 323 | 305 | 166 |
| Tacoma | WA | 32 | 151 | 304 | 122 |
| Tallahassee | FL | 222 | 90 | 313 | 194 |
| Tampa | FL | 56 | 189 | 193 | 152 |
| Tempe | AZ | 220 | 85 | 55 | 227 |
| Terre Haute | IN | 42 | 176 | 274 | 271 |

**TABLE 3: City rankings on factor scores (continued)**

| City | State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|---|
| Toledo | OH | 170 | 290 | 123 | 51 |
| Topeka | KS | 193 | 214 | 222 | 219 |
| Trenton | NJ | 287 | 268 | 322 | 176 |
| Troy | NY | 226 | 317 | 301 | 226 |
| Tucson | AZ | 227 | 46 | 63 | 61 |
| Tulsa | OK | 194 | 166 | 130 | 90 |
| Tuscaloosa | AL | 82 | 206 | 246 | 6 |
| Tyler | TX | 169 | 100 | 94 | 15 |
| Utica | NY | 179 | 324 | 232 | 318 |
| Vallejo | CA | 249 | 132 | 118 | 277 |
| Victoria | TX | 113 | 105 | 64 | 50 |
| Vineland | NJ | 239 | 221 | 234 | 250 |
| Virginia Beach | VA | 243 | 119 | 29 | 296 |
| Visalia | CA | 240 | 57 | 105 | 140 |
| Waco | TX | 160 | 134 | 215 | 32 |
| Waltham | MA | 77 | 247 | 108 | 303 |
| Warren | OH | 191 | 283 | 161 | 37 |
| Warwick | RI | 215 | 263 | 101 | 263 |
| Washington | DC | 177 | 301 | 181 | 315 |
| Waterbury | CT | 313 | 280 | 211 | 298 |
| Waterloo | IA | 43 | 229 | 152 | 73 |
| Waukesha | WI | 91 | 106 | 114 | 285 |
| West Palm Beach | FL | 204 | 102 | 275 | 172 |
| Wichita | KS | 184 | 123 | 47 | 96 |
| Wichita Falls | TX | 182 | 159 | 184 | 33 |
| Wilmington | DE | 228 | 226 | 294 | 311 |
| Wilmington | NC | 8 | 28 | 321 | 19 |
| Winston-Salem | NC | 181 | 67 | 205 | 117 |
| Worcester | MA | 276 | 255 | 53 | 204 |
| Yakima | WA | 267 | 29 | 324 | 48 |
| Youngstown | OH | 119 | 316 | 71 | 5 |
| Yuma | AZ | 280 | 14 | 86 | 310 |

**TABLE 4: Independent variables used in linear regression models**

*Dependent variables are the set of four factor scores. Most variables represent both level in 1990 and change between 1990 and 2000.*[7]

| Variable | Variable label | Definition |
|---|---|---|
| Percent manufacturing | pctmanuf90, chgmanuf | Percent of the labor force working in the manufacturing industry[1] |
| Percent FIRE | pctfire90, chgfire | Percent of the labor force working in the finance, insurance, and real estate industries[1] |
| Dependent population | pctdepend90, chgdepend | Percent of residents aged 16 and younger or 65 and over[1] |
| Average July temperature | avgjulytemp | Average July temperature[2] |
| Annexed popoulation | pctpopannx | Population annexed 1991-2000 as a percent of total 1990 population[3] |
| Percent Black | pctblk90, chgpctblk | Percent of residents who are Black, non-Hispanic[1] |
| Percent Hispanic | pcthisp90, chgpcthisp | Percent of residents who are Hispanic[1] |
| College enrollment | pctenroll90 | Number of students enrolled in cities' 4-year institutions as a percent of total population[4] |
| Average wage | wagperjob90, chgwagperjob | Average wage and salary disbursements per job, MSA level[5] |
| City age | cityage | Years in 1990 since city passed 50,000 in population[6] |
| Capital dummy variable | capital | 1= City is state capital |
| Regional dummy variables | coastse, contfarwest, greatlake, inlandse, noncontfarw, nthmideast, nthneweng, plains, rockymtn, sthneweng, sthwest, newyork | Dummy variables for region state is in (See Table 5 for list of states by region.) |

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.

[7] Exceptions are average July temperature, annexed population, and percent of residents enrolled in college.

**TABLE 5: Description of regional dummy variables**

| Region | Dummy Variable Label | Definition |
|---|---|---|
| Coastal Southeast | coastse | Florida, Georgia, North Carolina, South Carolina, Virginia |
| Continental Far West | contfarwest | California, Nevada, Oregon, Washington |
| Great Lakes | greatlake | Illinois, Indiana, Michigan, Ohio, Wisconsin, all New York state MSAs west of Albany, all Pennsylvania MSAs west of Philadelphia |
| Inland Southeast | inlandse | Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Tennessee, West Virginia |
| Non-continental Far West | noncontfarw: | Alaska, Hawaii |
| Northern Mideast | nthmideast | New Jersey except those in NY CMSA, New York except those in Great Lakes or New York CMSA, Pennsylvania except those in Great Lakes |
| Northern New England | nthneweng | Maine, New Hampshire, Vermont |
| Plains | plains | Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota |
| Rocky Mountains | rockymtn | Colorado, Idaho, Montana, Utah, Wyoming |
| Southern Mideast | sthmideast | Delaware, District of Columbia, Maryland |
| Southern New England | sthneweng | Connecticut, Massachusetts, Rhode Island |
| Southwest | sthwest | Arizona, New Mexico, Oklahoma, Texas |
| New York City CMSA | newyork | New York City CMSA |

**TABLE 6: Linear regression model of Income and Education factor**
*Dependent variable is the income and education factor score.*

| Variable | Coefficient | t-statistic | p-value |
|---|---|---|---|
| constant term | 1.0486 | 1.19 | 0.236 |
| pctmanuf90 | 0.0286 | 3.41*** | 0.001 |
| chgmanuf | 0.0729 | 2.74*** | 0.007 |
| pctfire90 | 0.0187 | 0.84 | 0.403 |
| chgfire | 0.1766 | 3.74*** | 0.000 |
| pctdepend90 | -0.0439 | -3.45*** | 0.001 |
| chgdepend | -0.2175 | -9.20*** | 0.000 |
| avgjulytemp | -0.0051 | -0.65 | 0.516 |
| pctpopannx | 0.0316 | 1.98** | 0.048 |
| pctblk90 | 0.0023 | 0.87 | 0.386 |
| chgpctblk | -0.0800 | -6.01*** | 0.000 |
| pcthisp90 | -0.0065 | -2.11** | 0.036 |
| chgpcthisp | -0.0829 | -8.19*** | 0.000 |
| pctenroll90 | -0.0091 | -2.04** | 0.042 |
| cityage | 0.0030 | 2.75*** | 0.006 |
| capital | -0.1056 | -0.93 | 0.351 |
| coastse | 0.8412 | 2.37** | 0.019 |
| contfarwest | 0.6453 | 1.72* | 0.086 |
| greatlake | 0.8907 | 2.44** | 0.015 |
| inlandse | 1.1021 | 3.01*** | 0.003 |
| noncontfarw | -0.2196 | -0.39 | 0.694 |
| nthmideast | 0.2993 | 0.71 | 0.478 |
| nthneweng | 0.0339 | 0.07 | 0.946 |
| plains | 0.9234 | 2.46** | 0.014 |
| rockymtn | 1.8288 | 4.62*** | 0.000 |
| sthneweng | 0.1409 | 0.36 | 0.720 |
| sthwest | 1.0502 | 2.81*** | 0.005 |
| newyork | -0.1445 | -0.37 | 0.711 |
| N | | 325 | |
| $R^2$ | | 0.6855 | |
| Adjusted $R^2$ | | 0.6569 | |
| F-statistic $_{(27, 297)}$ | | 23.98 (p-value 0.000) | |

* = significant at 0.1 level; ** = significant at 0.05 level; *** = significant at 0.01 level
Regional reference group = Southern Mideast
The highly loading variables on this factor are (all are change from 1990-2000):

- percent of adult residents with some college
- median household income
- per capita income
- poverty rate
- labor force participation rate
- median home value
- median rent

**TABLE 7: Linear regression model of Population and Employment factor**
*Dependent variable is the population and employment factor score.*

| Variable | Coefficient | t-statistic | p-value |
|---|---|---|---|
| constant term | -0.2240 | -0.19 | 0.849 |
| pctmanuf90 | -0.0136 | -1.28 | 0.201 |
| chgmanuf | -0.0118 | -0.38 | 0.705 |
| pctfire90 | 0.0333 | 1.22 | 0.224 |
| chgfire | -0.0490 | -0.90 | 0.369 |
| pctdepend90 | -0.0690 | -4.30*** | 0.000 |
| chgdepend | -0.0171 | -0.62 | 0.538 |
| avgjulytemp | 0.0420 | 4.62*** | 0.000 |
| pctpopannx | 0.0568 | 3.06*** | 0.002 |
| pctblk90 | -0.0098 | -3.10*** | 0.002 |
| chgpctblk | -0.0197 | -1.28 | 0.200 |
| pcthisp90 | 0.0043 | 1.22 | 0.222 |
| chgpcthisp | 0.0351 | 3.01*** | 0.003 |
| pctenroll90 | -0.0202 | -3.77*** | 0.000 |
| cityage | -0.0049 | -3.78*** | 0.000 |
| wagprjob90 | -0.0001 | -2.87*** | 0.004 |
| chgwagprjob | 0.0129 | 3.41*** | 0.001 |
| capital | -0.1986 | -1.53 | 0.127 |
| coastse | 0.3306 | 0.81 | 0.421 |
| contfarwest | 0.4695 | 1.16 | 0.247 |
| greatlake | 0.2955 | 0.74 | 0.458 |
| inlandse | 0.0721 | 0.17 | 0.865 |
| noncontfarw | 0.9348 | 1.48 | 0.141 |
| nthmideast | -0.1621 | -0.34 | 0.737 |
| plains | 0.2120 | 0.51 | 0.607 |
| rockymtn | 0.7683 | 1.75* | 0.080 |
| sthmideast | 0.0027 | 0.00 | 0.996 |
| sthneweng | -0.0768 | -0.18 | 0.858 |
| sthwest | 0.2041 | 0.48 | 0.632 |
| newyork | -0.1360 | -0.30 | 0.763 |
| N | | 325 | |
| $R^2$ | | 0.5994 | |
| Adjusted $R^2$ | | 0.5600 | |
| F-statistic $_{(29, 295)}$ | | 15.22 (p-value 0.000) | |

* = significant at 0.1 level; ** = significant at 0.05 level; *** = significant at 0.01 level
Region reference group = Northern New England
The highly loading variables on this factor are (all are change from 1990-2000):
population
employment by place of residence (city level)
employment by place of work (MSA level)

**TABLE 8: Linear regression model of Housing Affordability factor**
*Dependent variable is the housing affordability factor score.*

| Variable | Coefficient | t-statistic | p-value |
|---|---|---|---|
| constant term | 0.8632 | 0.61 | 0.539 |
| pctmanuf90 | 0.0091 | 0.69 | 0.494 |
| chgmanuf | -0.0318 | -0.82 | 0.414 |
| pctfire90 | 0.0139 | 0.41 | 0.684 |
| chgfire | 0.0632 | 0.93 | 0.352 |
| pctdepend90 | 0.0483 | 2.41** | 0.016 |
| chgdepend | 0.0763 | 2.21** | 0.028 |
| avgjulytemp | -0.0123 | -1.09 | 0.277 |
| pctpopannx | 0.0404 | 1.75* | 0.081 |
| pctblk90 | -0.0062 | -1.58 | 0.116 |
| chgpctblk | -0.0236 | -1.23 | 0.218 |
| pcthisp90 | -0.0091 | -2.08** | 0.038 |
| chgpcthisp | 0.0251 | 1.73* | 0.085 |
| pctenroll90 | 0.0284 | 4.26*** | 0.000 |
| cityage | 0.0052 | 3.26*** | 0.001 |
| wagprjob90 | -0.0001 | -4.55*** | 0.000 |
| chgwagprjob | 0.0013 | 0.27 | 0.789 |
| capital | 0.5747 | 3.55*** | 0.000 |
| coastse | 0.3884 | 1.86* | 0.064 |
| contfarwest | 0.6608 | 3.11*** | 0.002 |
| inlandse | 0.0756 | 0.34 | 0.738 |
| noncontfarw | 0.7967 | 1.23 | 0.221 |
| nthmideast | 0.7119 | 1.93* | 0.054 |
| nthneweng | -1.3783 | -2.78*** | 0.006 |
| plains | -0.3569 | -1.73* | 0.084 |
| rockymtn | 0.2509 | 0.87 | 0.383 |
| sthmideast | 1.1529 | 2.21** | 0.028 |
| sthneweng | -1.1065 | -4.12*** | 0.000 |
| sthwest | -0.0547 | -0.23 | 0.822 |
| newyork | 1.2854 | 3.89*** | 0.000 |
| N | | 325 | |
| $R^2$ | | 0.3371 | |
| Adjusted $R^2$ | | 0.2719 | |
| F-statistic $_{(29, 295)}$ | | 5.17 (p-value 0.000) | |

* = significant at 0.1 level; ** = significant at 0.05 level; *** = significant at 0.01 level
Region reference group = Great Lakes
The highly loading variables on this factor are (all are change from 1990-2000):
percent of households spending more than 30% of income on housing
percent of households spending more than 50% of income on housing

**TABLE 9: Linear regression model of Concentrated Poverty factor**
*Dependent variable is the concentrated poverty factor score.*

| Variable | Coefficient | t-statistic | p-value |
|---|---|---|---|
| constant term | 1.5905 | 1.16 | 0.248 |
| pctmanuf90 | -0.0225 | -1.78* | 0.077 |
| chgmanuf | -0.0692 | -1.87* | 0.063 |
| pctfire90 | -0.0147 | -0.45 | 0.653 |
| chgfire | -0.0190 | -0.29 | 0.770 |
| pctdepend90 | -0.0450 | -2.35** | 0.019 |
| chgdepend | 0.0391 | 1.18 | 0.239 |
| avgjulytemp | -0.0032 | -0.29 | 0.768 |
| pctpopannx | -0.0359 | -1.62 | 0.106 |
| pctblk90 | -0.0210 | -5.59*** | 0.000 |
| chgpctblk | 0.0051 | 0.28 | 0.782 |
| pcthisp90 | -0.0226 | -5.38*** | 0.000 |
| chgpcthisp | 0.227 | 1.64 | 0.102 |
| pctenroll90 | -0.0091 | -1.43 | 0.155 |
| cityage | 0.0010 | 0.66 | 0.511 |
| wagprjob90 | 0.00004 | 1.57 | 0.117 |
| chgwagprjob | 0.0069 | 1.52 | 0.129 |
| capital | -0.0154 | -0.10 | 0.921 |
| coastse | 0.1062 | 0.40 | 0.692 |
| contfarwest | 0.2423 | 0.92 | 0.358 |
| greatlake | -0.0287 | -0.10 | 0.917 |
| inlandse | -0.2372 | -0.80 | 0.423 |
| noncontfarw | -0.5035 | -0.77 | 0.444 |
| nthmideast | 0.2392 | 0.57 | 0.567 |
| nthneweng | -0.0307 | -0.06 | 0.953 |
| plains | -0.1280 | -0.46 | 0.643 |
| sthmideast | 1.2597 | 2.31** | 0.021 |
| sthneweng | -0.1832 | -0.56 | 0.579 |
| sthwest | -0.3081 | -1.16 | 0.248 |
| newyork | -0.0757 | -0.20 | 0.838 |
| N | | 325 | |
| $R^2$ | | 0.4013 | |
| Adjusted $R^2$ | | 0.3424 | |
| F-statistic $_{(29, 295)}$ | | 6.82 (p-value 0.000) | |

* = significant at 0.1 level; ** = significant at 0.05 level; *** = significant at 0.01 level
Region reference group = Rocky Mountains
The highly loading variables on this factor are (all are change from 1990-2000):
poverty rate
percent of population living in poor neighborhoods
percent of poor population living in poor neighborhoods

**TABLE 10: Linear regression model of residuals from Income and Education factor model**

| State | Coefficient | t-statistic | p-value |
|---|---|---|---|
| Alabama | -0.159 | -0.73 | 0.469 |
| Arizona | -0.045 | -0.20 | 0.838 |
| Arkansas | 0.067 | 0.25 | 0.802 |
| California | -0.162 | -1.81 ** | 0.071 |
| Colorado | 0.405 | 2.00 ** | 0.047 |
| Connecticut | -0.198 | -1.04 | 0.299 |
| Florida | 0.029 | 0.24 | 0.808 |
| Georgia | 0.034 | 0.14 | 0.887 |
| Illinois | 0.306 | 1.89 ** | 0.060 |
| Indiana | 0.193 | 1.08 | 0.282 |
| Iowa | 0.015 | 0.08 | 0.936 |
| Kansas | 0.278 | 1.16 | 0.248 |
| Kentucky | 0.004 | 0.01 | 0.990 |
| Louisiana | 0.212 | 1.04 | 0.297 |
| Massachusetts | 0.093 | 0.57 | 0.566 |
| Michigan | -0.394 | -2.43 ** | 0.016 |
| Minnesota | -0.099 | -0.37 | 0.712 |
| Missouri | -0.044 | -0.20 | 0.841 |
| New Jersey | 0.274 | 1.25 | 0.213 |
| New Mexico | 0.219 | 0.71 | 0.479 |
| New York | -0.226 | -1.33 | 0.184 |
| North Carolina | 0.198 | 1.17 | 0.244 |
| Ohio | 0.204 | 1.42 | 0.156 |
| Oklahoma | -0.337 | -1.26 | 0.210 |
| Oregon | 0.863 | 2.79 ** | 0.006 |
| Pennsylvania | -0.301 | -1.77 ** | 0.077 |
| Rhode Island | -0.184 | -0.59 | 0.554 |
| South Carolina | -0.421 | -1.57 | 0.118 |
| Tennessee | -0.098 | -0.41 | 0.684 |
| Texas | 0.031 | 0.32 | 0.749 |
| Utah | 0.198 | 0.74 | 0.462 |
| Virginia | -0.096 | -0.59 | 0.555 |
| Washington | 0.337 | 1.66 ** | 0.098 |
| Wisconsin | 0.100 | 0.62 | 0.535 |
| N | | 303 | |
| $R^2$ | | 0.1553 | |
| Adjusted $R^2$ | | 0.0486 | |
| F-statistic $_{(34, 269)}$ | | 1.46 (p-value 0.0558) | |

** = significant at the 0.10 level

**TABLE 11: Linear regression model of residuals from Population and Employment factor model**

| State | Coefficient | t-statistic | p-value |
|---|---|---|---|
| Alabama | 0.014 | 0.06 | 0.955 |
| Arizona | 0.189 | 0.78 | 0.327 |
| Arkansas | -0.368 | -1.23 | 0.218 |
| California | -0.159 | -1.60 | 0.112 |
| Colorado | -0.073 | -0.32 | 0.747 |
| Connecticut | -0.177 | -0.84 | 0.401 |
| Florida | -0.135 | -1.01 | 0.312 |
| Georgia | -0.299 | -1.12 | 0.264 |
| Illinois | 0.445 | 2.48 ** | 0.014 |
| Indiana | -0.146 | -0.74 | 0.462 |
| Iowa | -0.254 | -1.20 | 0.230 |
| Kansas | 0.204 | 0.77 | 0.445 |
| Kentucky | -0.192 | -0.56 | 0.578 |
| Louisiana | 0.320 | 1.42 | 0.157 |
| Massachusetts | 0.096 | 0.54 | 0.592 |
| Michigan | 0.181 | 1.01 | 0.315 |
| Minnesota | 0.156 | 0.52 | 0.601 |
| Missouri | -0.050 | -0.20 | 0.838 |
| New Jersey | -0.112 | -0.46 | 0.646 |
| New Mexico | -0.216 | -0.63 | 0.531 |
| New York | -0.138 | -0.73 | 0.464 |
| North Carolina | 0.680 | 3.61 ** | 0.000 |
| Ohio | 0.005 | 0.03 | 0.976 |
| Oklahoma | -0.023 | -0.08 | 0.938 |
| Oregon | 0.635 | 1.85 ** | 0.066 |
| Pennsylvania | -0.448 | -2.38 ** | 0.018 |
| Rhode Island | -0.085 | -0.25 | 0.805 |
| South Carolina | 0.194 | 0.65 | 0.515 |
| Tennessee | 0.143 | 0.54 | 0.591 |
| Texas | -0.013 | -0.12 | 0.905 |
| Utah | 0.348 | 1.17 | 0.244 |
| Virginia | -0.307 | -1.71 ** | 0.088 |
| Washington | 0.197 | 0.88 | 0.382 |
| Wisconsin | 0.137 | 0.76 | 0.446 |
| N | | 303 | |
| $R^2$ | | 0.1570 | |
| Adjusted $R^2$ | | 0.0504 | |
| F-statistic $_{(34, 269)}$ | | 1.47 (p-value 0.0501) | |

** = significant at the 0.10 level

**TABLE 12: Linear regression model of residuals from Housing Affordability factor model**

| State | Coefficient | t-statistic | p-value |
|---|---|---|---|
| Alabama | 0.598 | 1.97 ** | 0.049 |
| Arizona | -0.492 | -1.62 | 0.105 |
| Arkansas | -0.047 | -0.13 | 0.900 |
| California | -0.253 | -2.04 ** | 0.042 |
| Colorado | 0.044 | 0.16 | 0.877 |
| Connecticut | -0.182 | -0.70 | 0.488 |
| Florida | -0.082 | -0.49 | 0.622 |
| Georgia | 0.070 | 0.21 | 0.833 |
| Illinois | 0.316 | 1.41 | 0.159 |
| Indiana | 0.059 | 0.24 | 0.813 |
| Iowa | 0.307 | 1.17 | 0.243 |
| Kansas | -0.689 | -2.08 ** | 0.039 |
| Kentucky | 0.199 | 0.46 | 0.643 |
| Louisiana | -1.017 | -3.63 ** | 0.000 |
| Massachusetts | -0.157 | -0.70 | 0.484 |
| Michigan | -0.488 | -2.18 ** | 0.030 |
| Minnesota | 0.212 | 0.57 | 0.568 |
| Missouri | 0.178 | 0.59 | 0.557 |
| New Jersey | 0.398 | 1.31 | 0.190 |
| New Mexico | 0.713 | 1.66 ** | 0.097 |
| New York | 0.157 | 0.67 | 0.504 |
| North Carolina | 0.403 | 1.72 ** | 0.087 |
| Ohio | 0.023 | 0.12 | 0.907 |
| Oklahoma | -0.277 | -0.75 | 0.455 |
| Oregon | 0.583 | 1.36 | 0.175 |
| Pennsylvania | 0.621 | 2.65 ** | 0.009 |
| Rhode Island | 0.030 | 0.07 | 0.944 |
| South Carolina | 0.013 | 0.04 | 0.972 |
| Tennessee | 0.361 | 1.09 | 0.277 |
| Texas | 0.062 | 0.47 | 0.642 |
| Utah | 0.151 | 0.41 | 0.684 |
| Virginia | -0.254 | -1.14 | 0.257 |
| Washington | 1.036 | 3.69 ** | 0.000 |
| Wisconsin | -0.549 | -2.45 ** | 0.015 |
| N | | 303 | |
| $R^2$ | | 0.2257 | |
| Adjusted $R^2$ | | 0.1278 | |
| F-statistic $_{(34, 269)}$ | | 2.31 (p-value 0.0001) | |

** = significant at the 0.10 level

**TABLE 13: Linear regression model of residuals from Concentrated Poverty factor model**

| State | Coefficient | t-statistic | p-value |
|---|---|---|---|
| Alabama | -0.432 | -1.47 | 0.142 |
| Arizona | 0.565 | 1.93 ** | 0.055 |
| Arkansas | 0.354 | 0.98 | 0.326 |
| California | 0.224 | 1.87 ** | 0.063 |
| Colorado | -0.115 | -0.42 | 0.672 |
| Connecticut | -0.134 | -0.53 | 0.598 |
| Florida | -0.011 | -0.07 | 0.946 |
| Georgia | 0.327 | 1.02 | 0.310 |
| Illinois | 0.260 | 1.20 | 0.232 |
| Indiana | 0.576 | 2.41 ** | 0.017 |
| Iowa | -0.073 | -0.29 | 0.773 |
| Kansas | 0.295 | 0.92 | 0.359 |
| Kentucky | -0.003 | -0.01 | 0.995 |
| Louisiana | 0.071 | 0.26 | 0.794 |
| Massachusetts | -0.213 | -0.99 | 0.325 |
| Michigan | -0.545 | -2.52 ** | 0.012 |
| Minnesota | -0.153 | -0.42 | 0.671 |
| Missouri | -0.143 | -0.49 | 0.627 |
| New Jersey | 0.204 | 0.70 | 0.487 |
| New Mexico | 1.286 | 3.10 ** | 0.002 |
| New York | 0.283 | 1.25 | 0.214 |
| North Carolina | -0.248 | -1.09 | 0.276 |
| Ohio | -0.563 | -2.93 ** | 0.004 |
| Oklahoma | 0.333 | 0.93 | 0.355 |
| Oregon | -0.542 | -1.31 | 0.193 |
| Pennsylvania | 0.181 | 0.80 | 0.426 |
| Rhode Island | 0.805 | 1.94 ** | 0.053 |
| South Carolina | -0.126 | -0.35 | 0.726 |
| Tennessee | 0.084 | 0.26 | 0.793 |
| Texas | -0.277 | -2.14 ** | 0.033 |
| Utah | 0.213 | 0.59 | 0.553 |
| Virginia | 0.143 | 0.66 | 0.511 |
| Washington | -0.729 | -2.68 ** | 0.008 |
| Wisconsin | 0.089 | 0.41 | 0.681 |
| N | | 303 | |
| $R^2$ | | 0.2044 | |
| Adjusted $R^2$ | | 0.1039 | |
| F-statistic $_{(34, 269)}$ | | 2.03 (p-value 0.0010) | |

** = significant at the 0.10 level

**TABLE 14: Significant states by model**

*Dependent variables are the residuals from the non-policy models of the factor scores; independent variables are the state dummy variables*

| State | Income and Education | Population and Employment | Housing Affordability | Concentrated Poverty |
|---|---|---|---|---|
| Alabama | | | + | |
| Arizona | | | | + |
| Arkansas | | | | |
| California | - | | - | + |
| Colorado | + | | | |
| Connecticut | | | | |
| Florida | | | | |
| Georgia | | | | |
| Illinois | + | + | | |
| Indiana | | | | + |
| Iowa | | | | |
| Kansas | | | - | |
| Kentucky | | | | |
| Louisiana | | | - | |
| Massachusetts | | | | |
| Michigan | - | | - | - |
| Minnesota | | | | |
| Missouri | | | | |
| New Jersey | | | | |
| New Mexico | | | + | + |
| New York | | | | |
| North Carolina | | + | + | |
| Ohio | | | | - |
| Oklahoma | | | | |
| Oregon | + | + | | |
| Pennsylvania | - | - | + | |
| Rhode Island | | | | + |
| South Carolina | | | | |
| Tennessee | | | | |
| Texas | | | | - |
| Utah | | | | |
| Virginia | | - | | |
| Washington | + | | + | - |
| Wisconsin | | | - | |

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