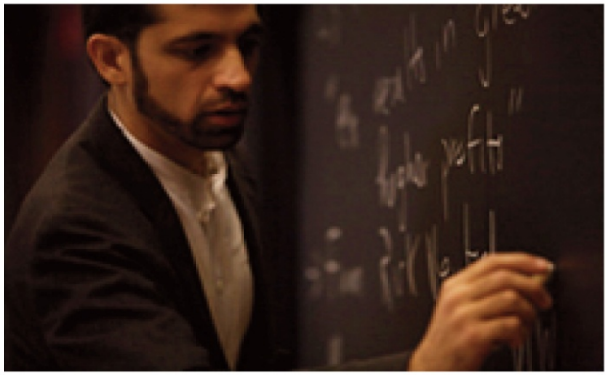
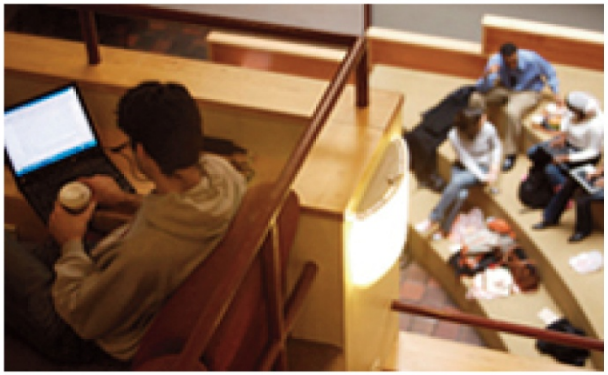
HARVARD Kennedy School
RAPPAPORT INSTITUTE
for Greater Boston





The Growth of Small, Cold Cities

Edward Glaeser

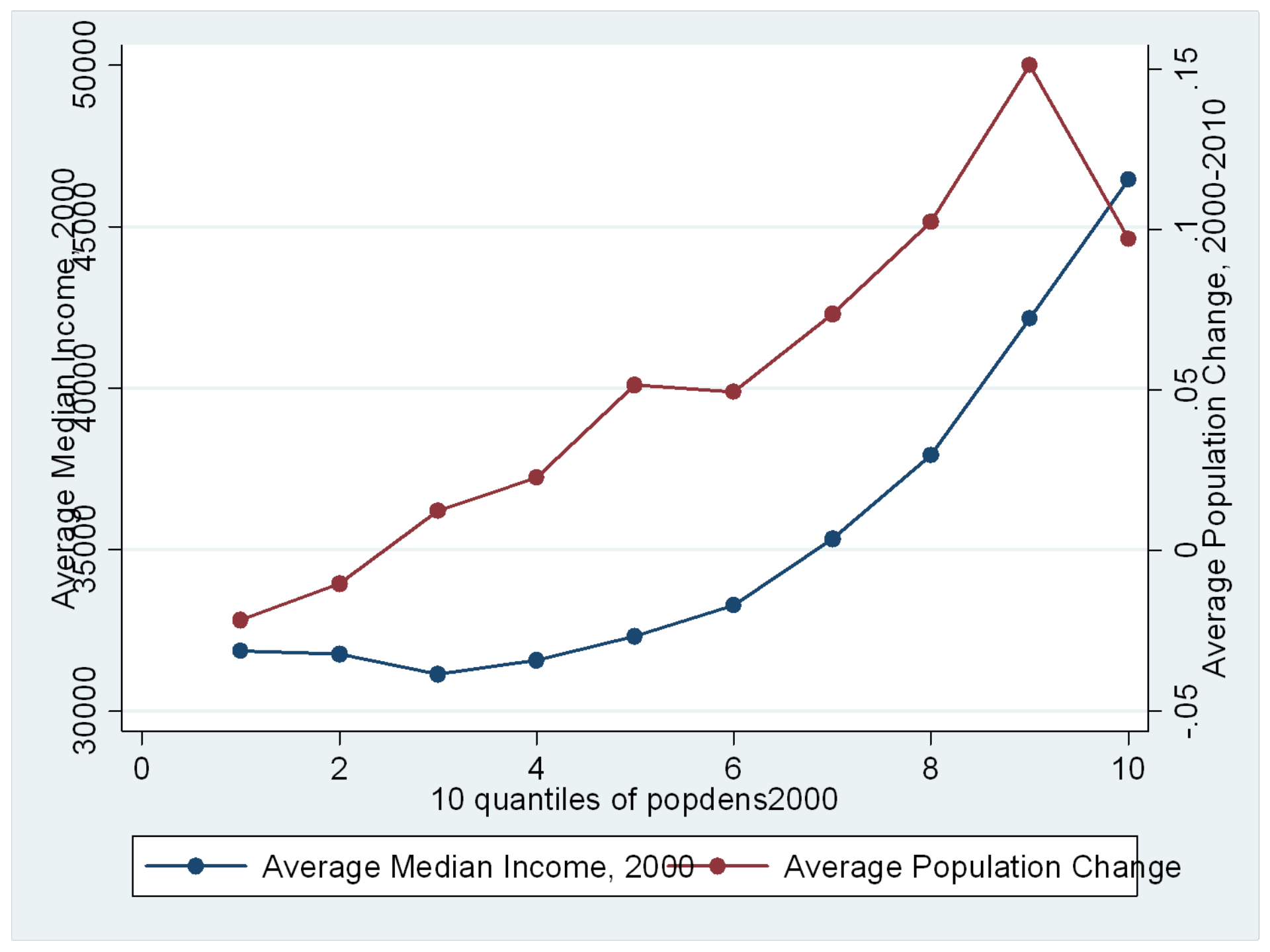
Director, Rappaport Institute for Greater Boston and
Professor of Economics, Harvard University

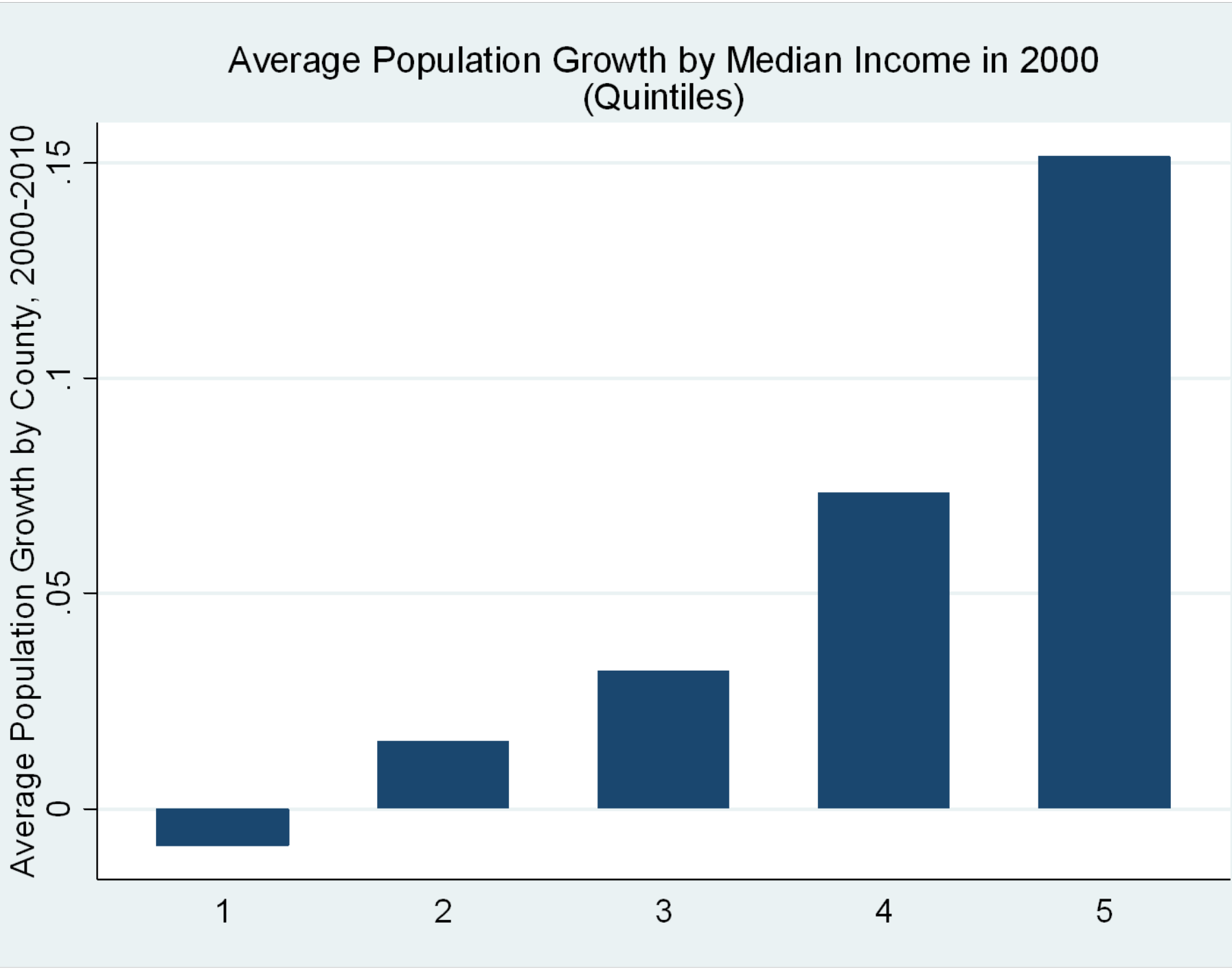
Forum on "Collaboration and Leadership in Smaller, Industrial Cities"

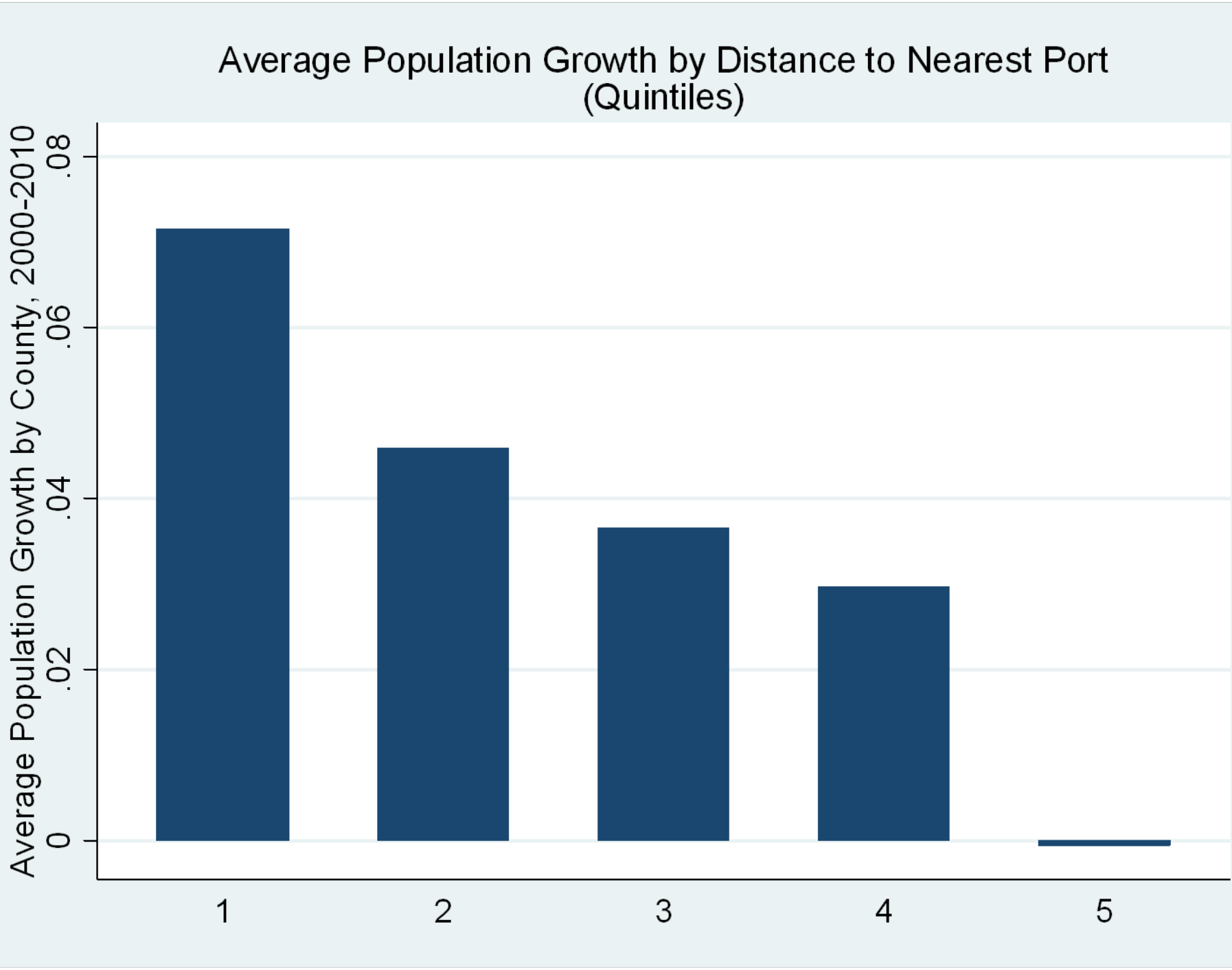
July 13, 2011

Outline

- Patterns in the 2010 Census –
  Density, Income, Temperature and Skills
- Cities are not Counties
  and Small Cities are Not Big Cities
- What Matters for Medium-Size City Growth within the U.S.?
- How Does Massachusetts Differ?
- Policy Questions

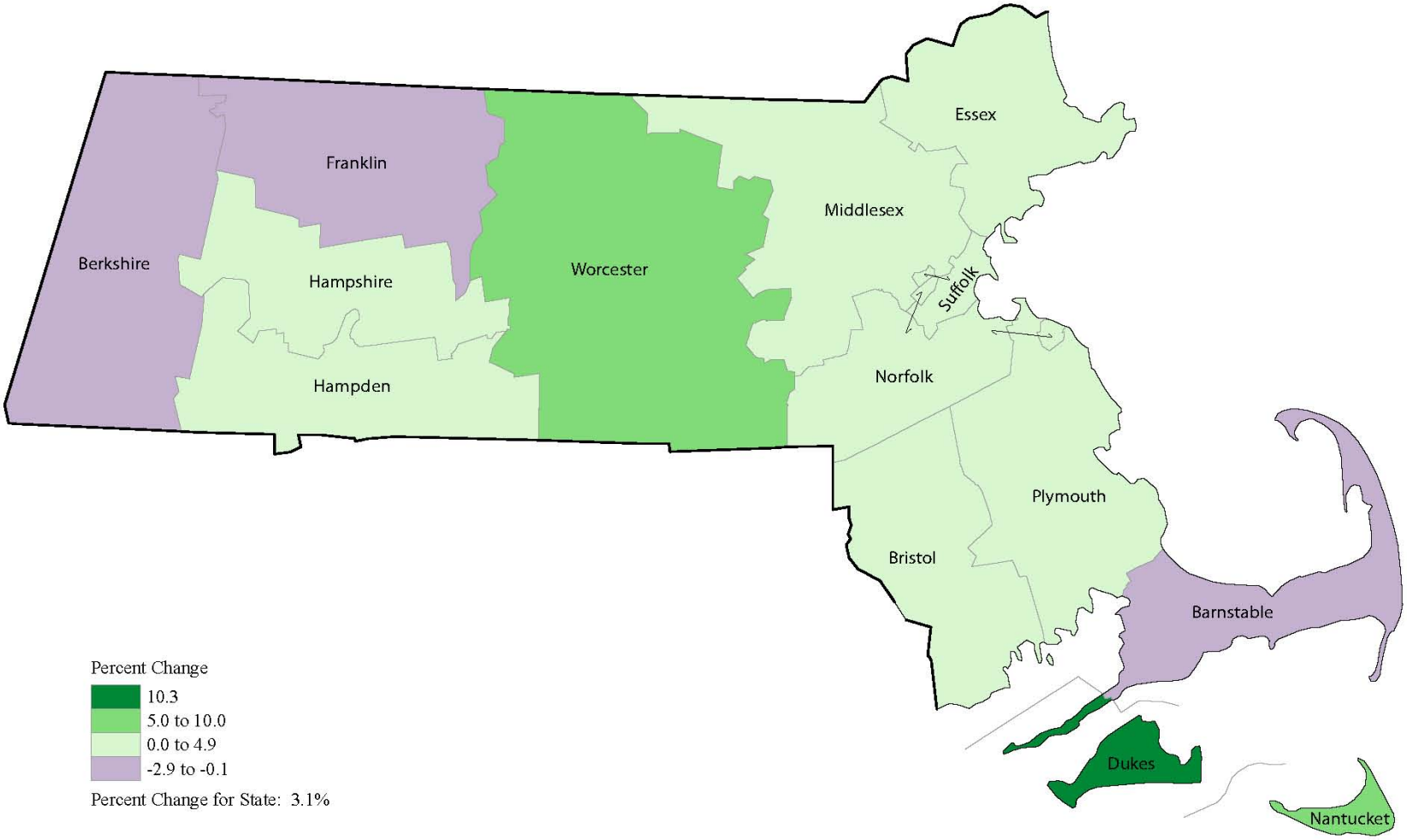

Average Median Income, 2000
30000
35000
40000
45000
50000
Average Population Change, 2000-2010
-.05
0
.05
.1
.15
0
2
4
6
8
10
10 quantiles of popdens2000
Average Median Income, 2000
Average Population Change


Average Population Growth by Median Income in 2000
(Quintiles)
Average Population Growth by County, 2000-2010
0
.05
.1
.15
1
2
3
4
5


Average Population Growth by Distance to Nearest Port
(Quintiles)
Average Population Growth by County, 2000-2010
0
.02
.04
.06
.08
1
2
3
4
5

MASSACHUSETTS - 2010 Census Results

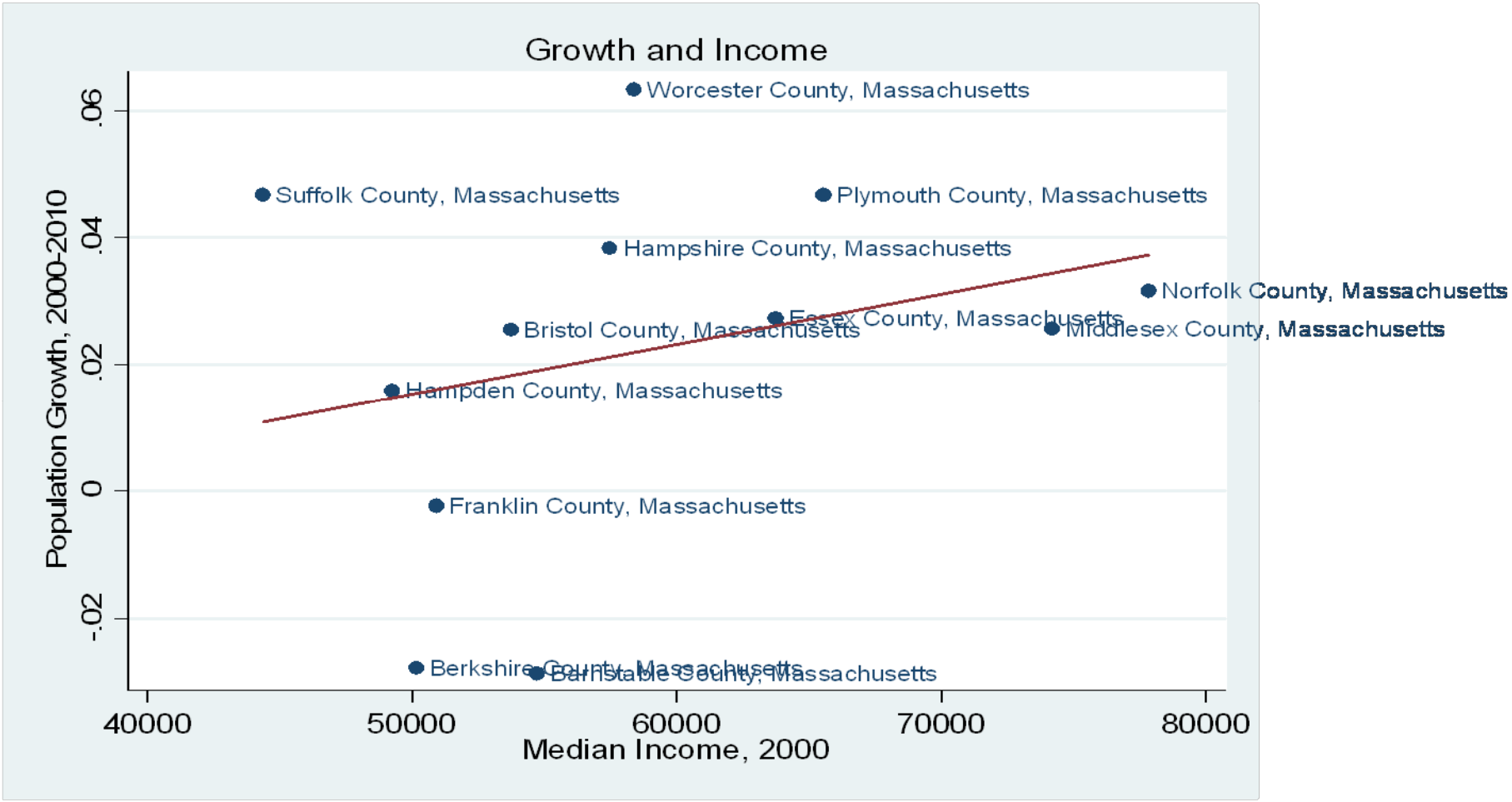
Percent Change in Population by County: 2000 to 2010

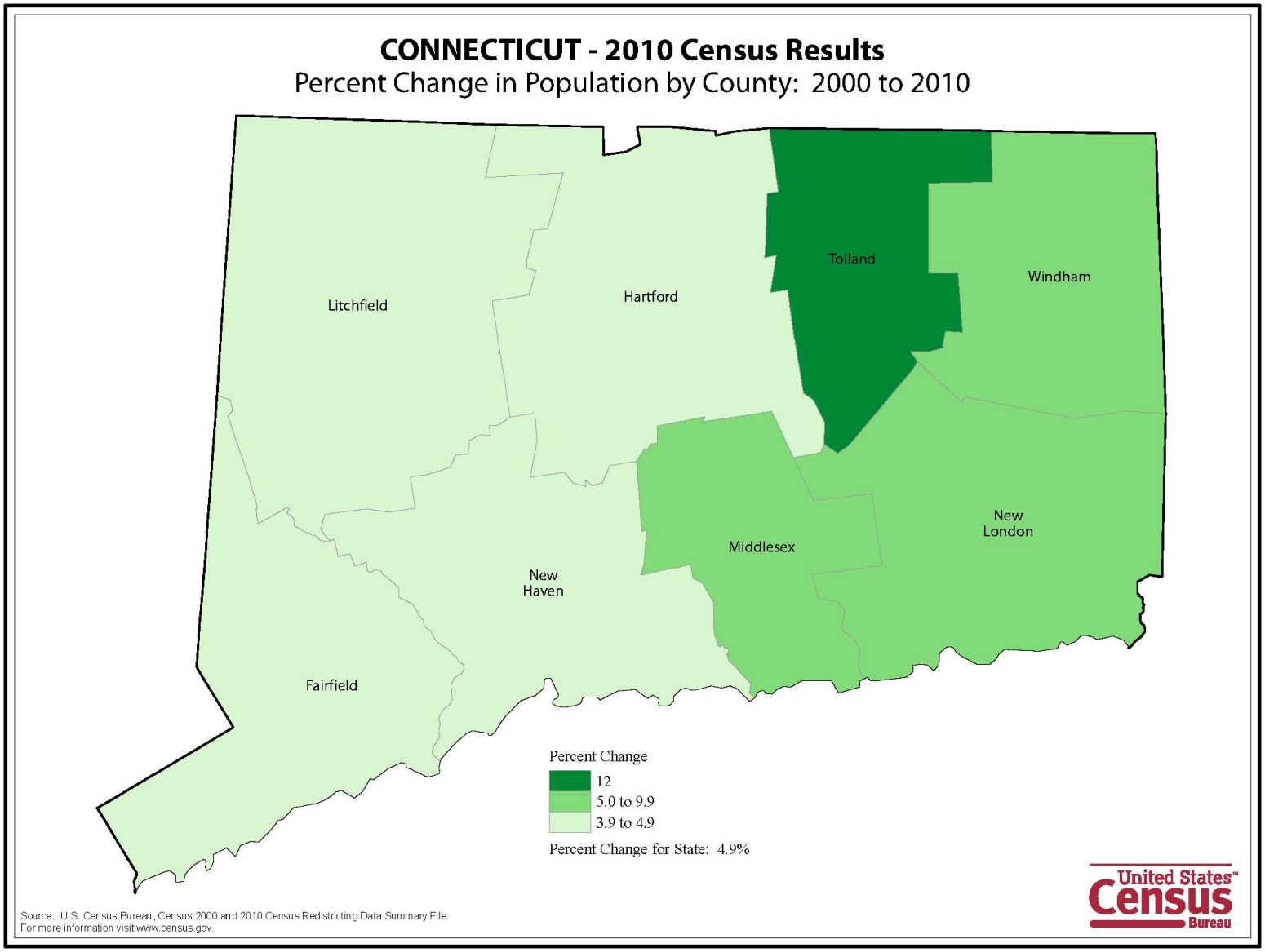


Source: U.S. Census Bureau, Census 2000 and 2010 Census Redistricting Data Summary File
For more information visit www.census.gov.

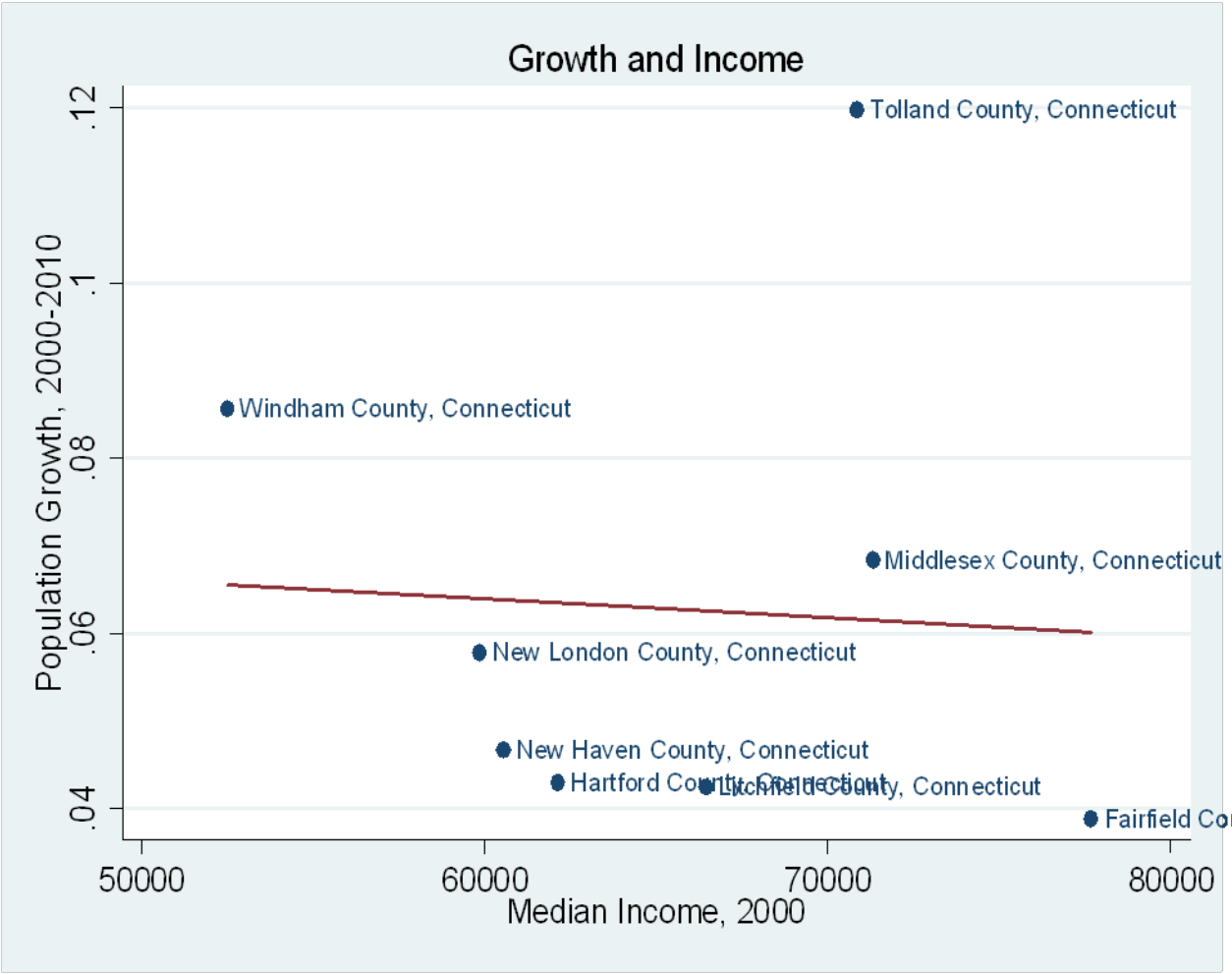
United States Census Bureau

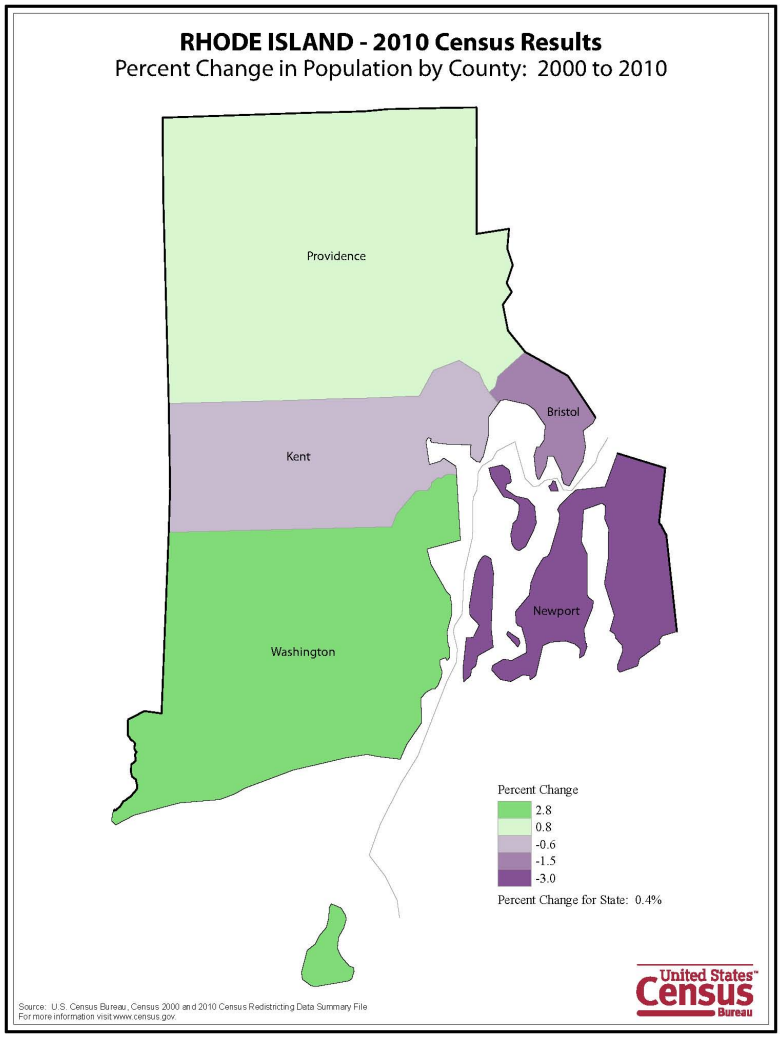
Growth and Income in MA

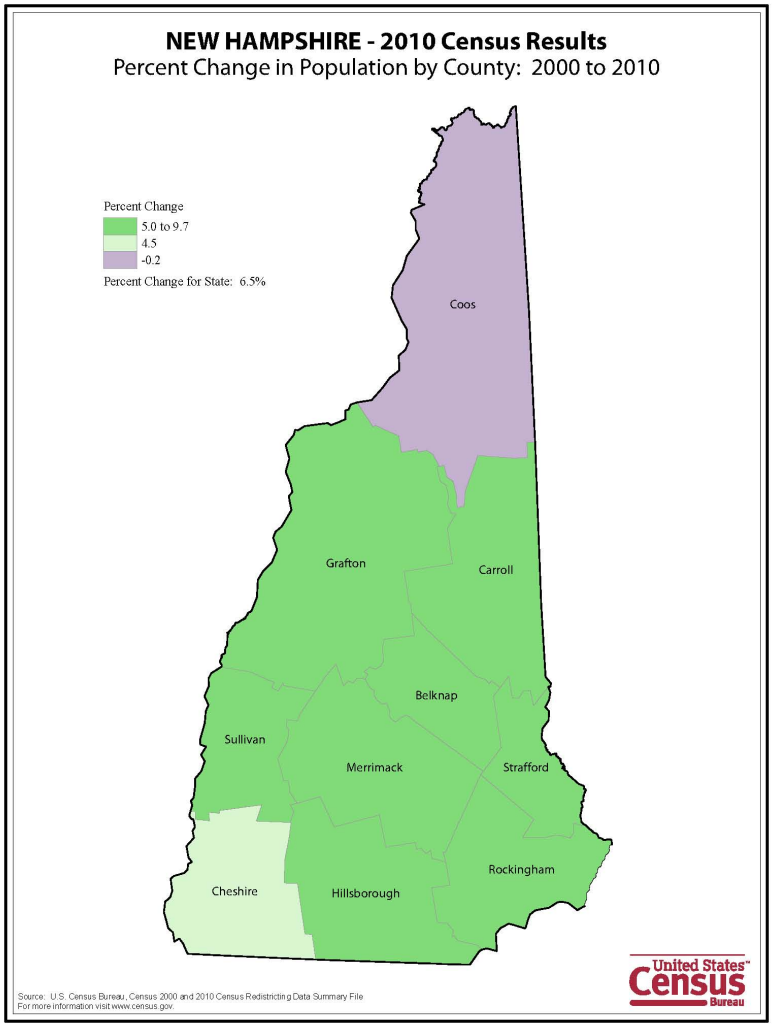



CONNECTICUT - 2010 Census Results
Percent Change in Population by County: 2000 to 2010
Litchfield
Hartford
Tolland
Windham
New Haven
Middlesex
New London
Fairfield
Percent Change
12
5.0 to 9.9
3.9 to 4.9
Percent Change for State: 4.9%
Source: U.S. Census Bureau, Census 2000 and 2010 Census Redistricting Data Summary File
For more information visit www.census.gov.
United States Census Bureau

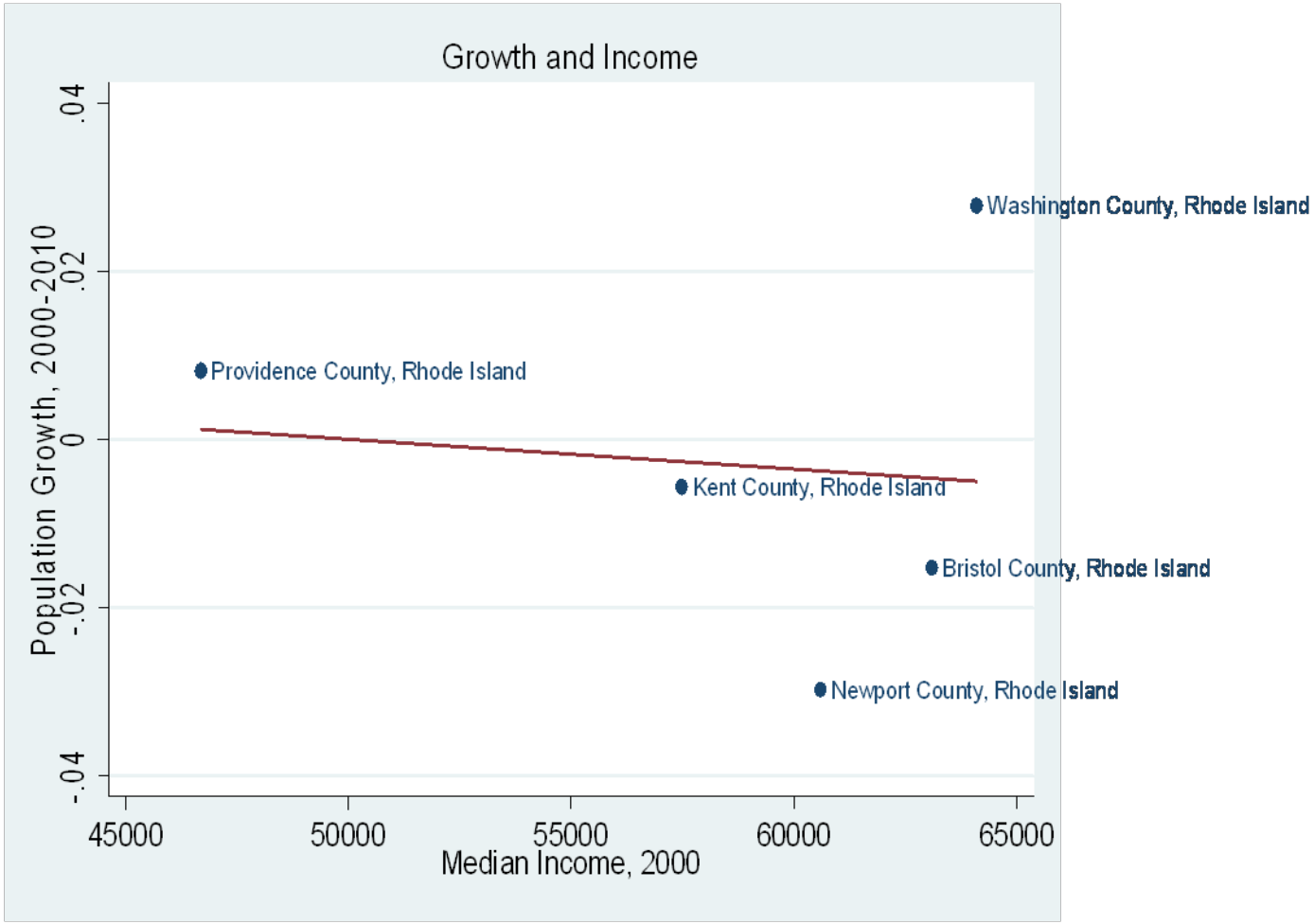
Growth and Income in CT



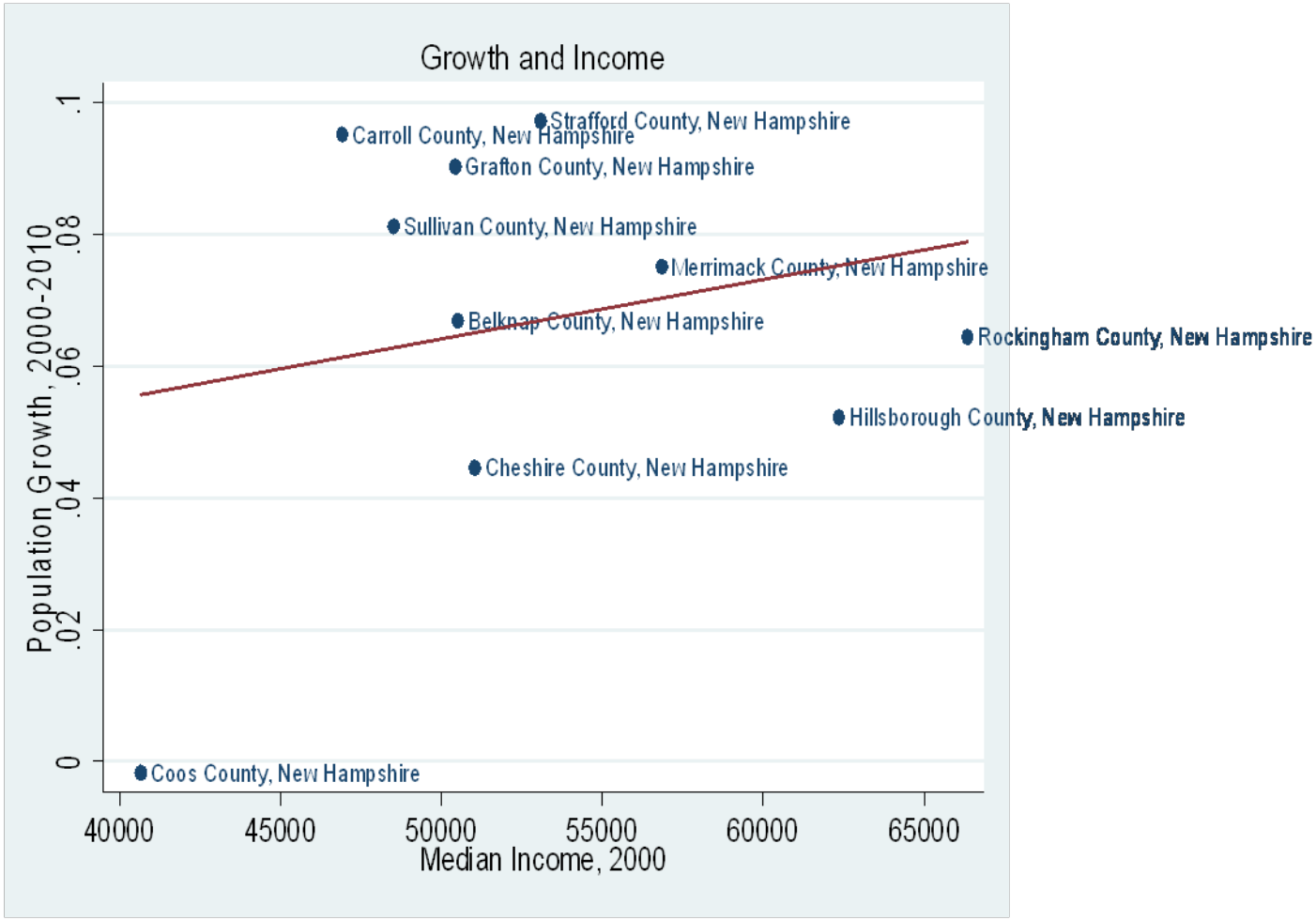

RHODE ISLAND - 2010 Census Results
Percent Change in Population by County: 2000 to 2010
Providence
Bristol
Kent
Newport
Washington
Percent Change
2.8
0.8
-0.6
-1.5
-3.0
Percent Change for State: 0.4%
Source: U.S. Census Bureau, Census 2000 and 2010 Census Redistricting Data Summary File
For more information visit www.census.gov.
United States Census Bureau


NEW HAMPSHIRE - 2010 Census Results
Percent Change in Population by County: 2000 to 2010
Percent Change
5.0 to 9.7
4.5
-0.2
Percent Change for State: 6.5%
Coos
Grafton
Carroll
Belknap
Sullivan
Merrimack
Strafford
Rockingham
Cheshire
Hillsborough
Source: U.S. Census Bureau, Census 2000 and 2010 Census Redistricting Data Summary File
For more information visit www.census.gov.
United States Census Bureau

Growth and Income in RI



Growth and Income in NH

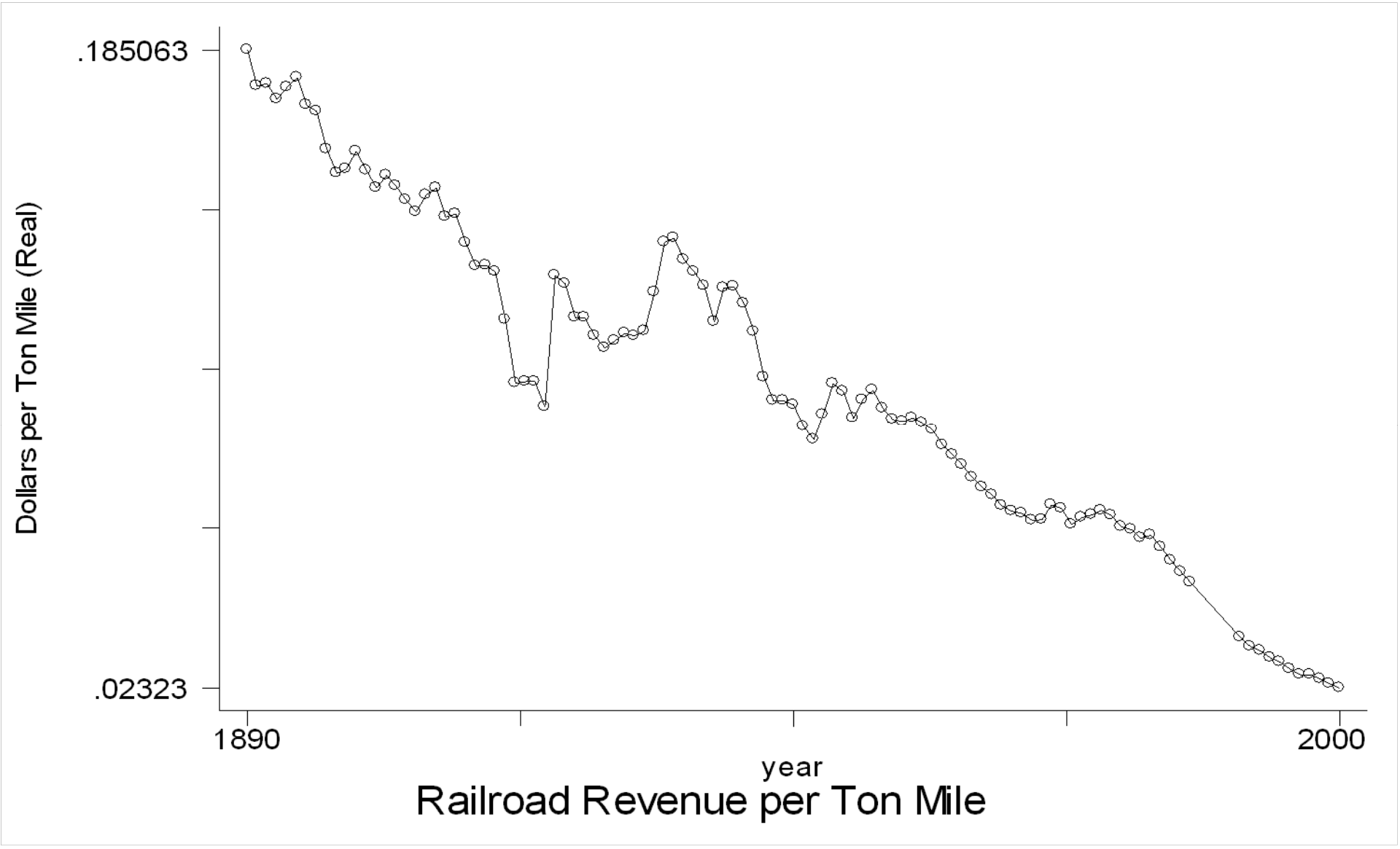


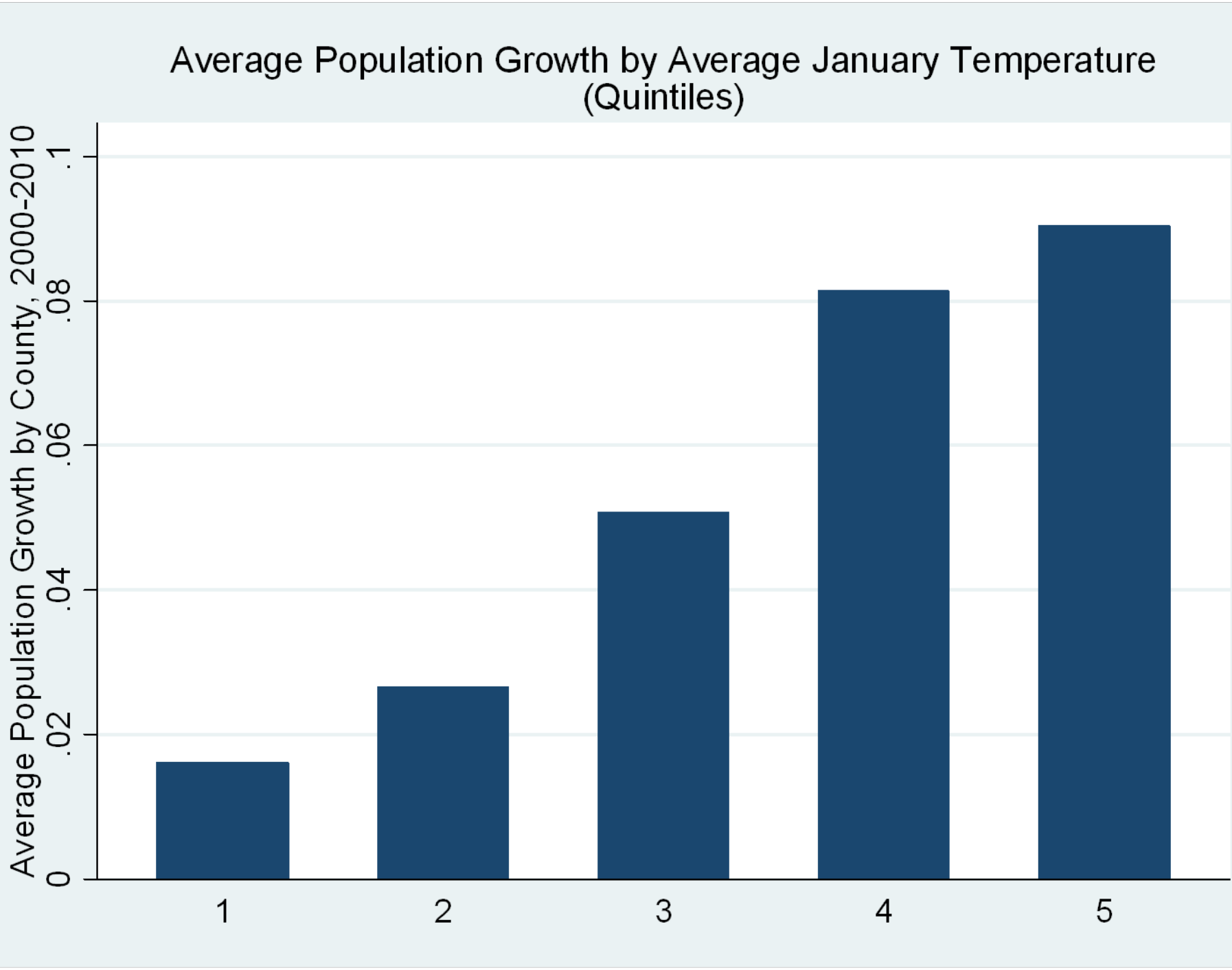
Innovation in the Industrial Age

Francis Cabot Lowell goes to Manchester and memorizes the structure of power looms– Boston associates establish Lowell and Lawrence.

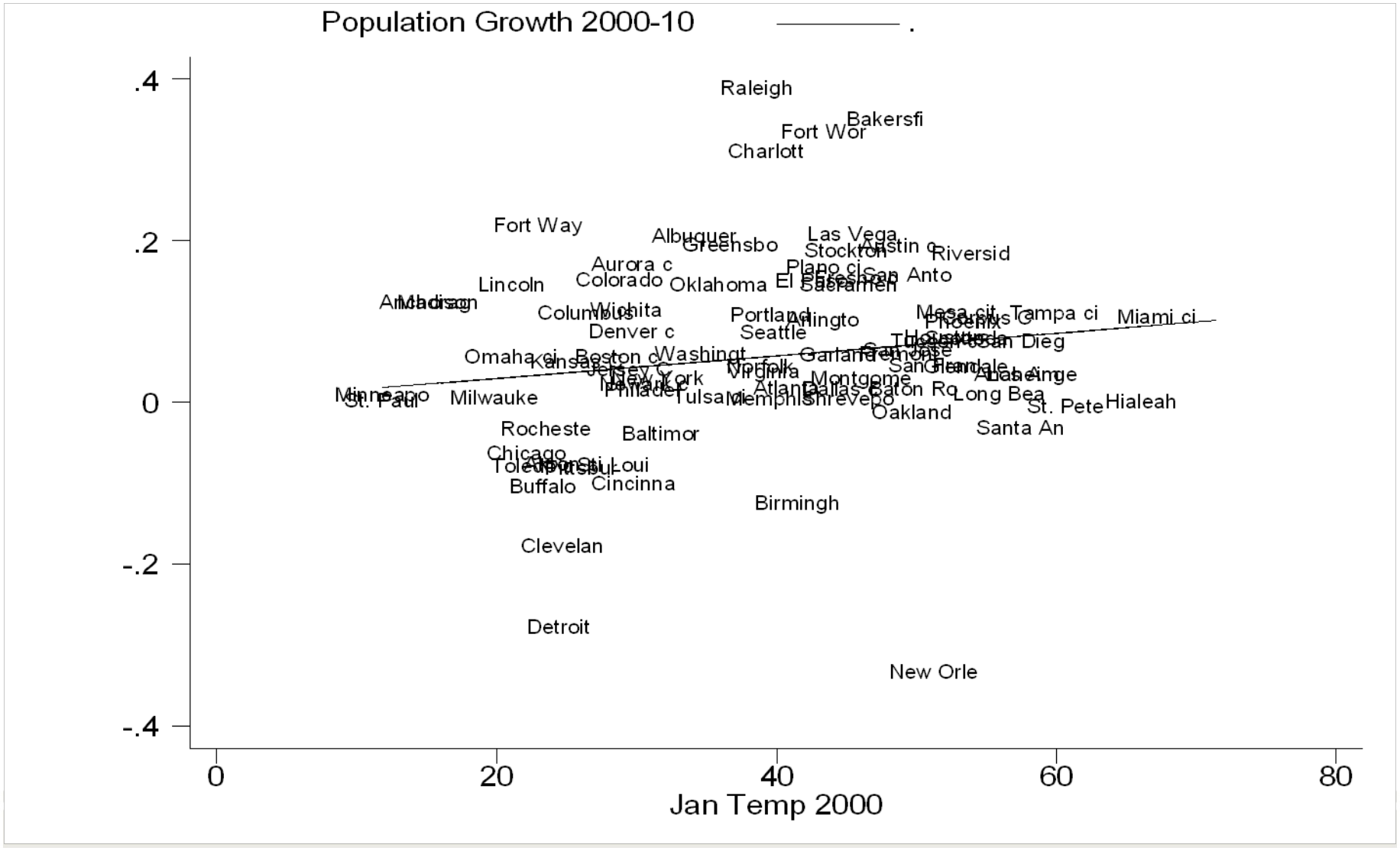
The “father of American watch-making,” “went to Boston to perfect himself as a journeyman watchmaker … so that he could get the instruction of Tubal Hone, then the best watch-maker in America.”

Lawrence establishes the Lawrence Scientific School at Harvard; Rogers comes to Boston for the scientific atmosphere and gets the legislature to found M.I.T.

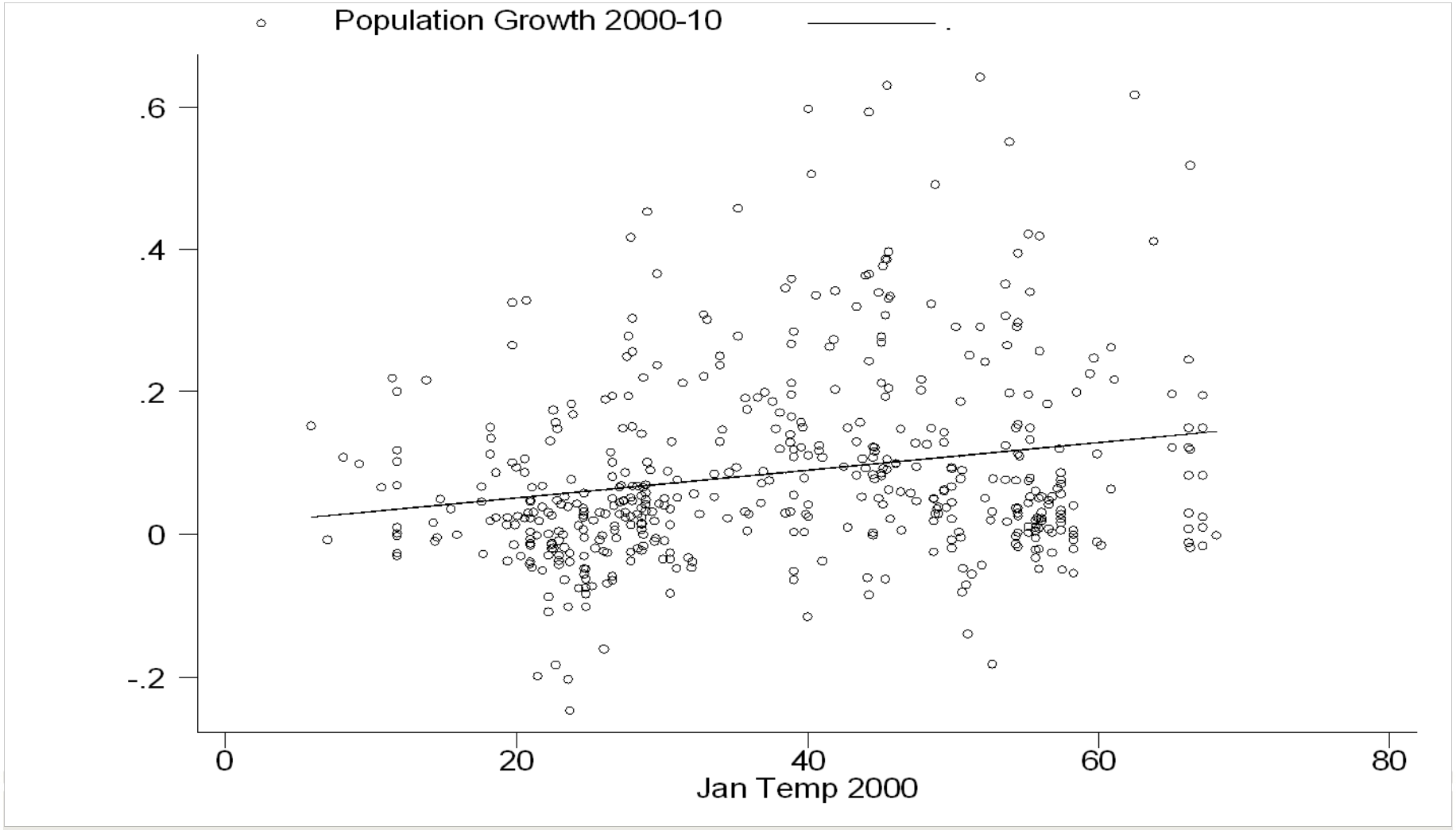

.185063
.02323
Dollars per Ton Mile (Real)
1890
2000
year
Railroad Revenue per Ton Mile

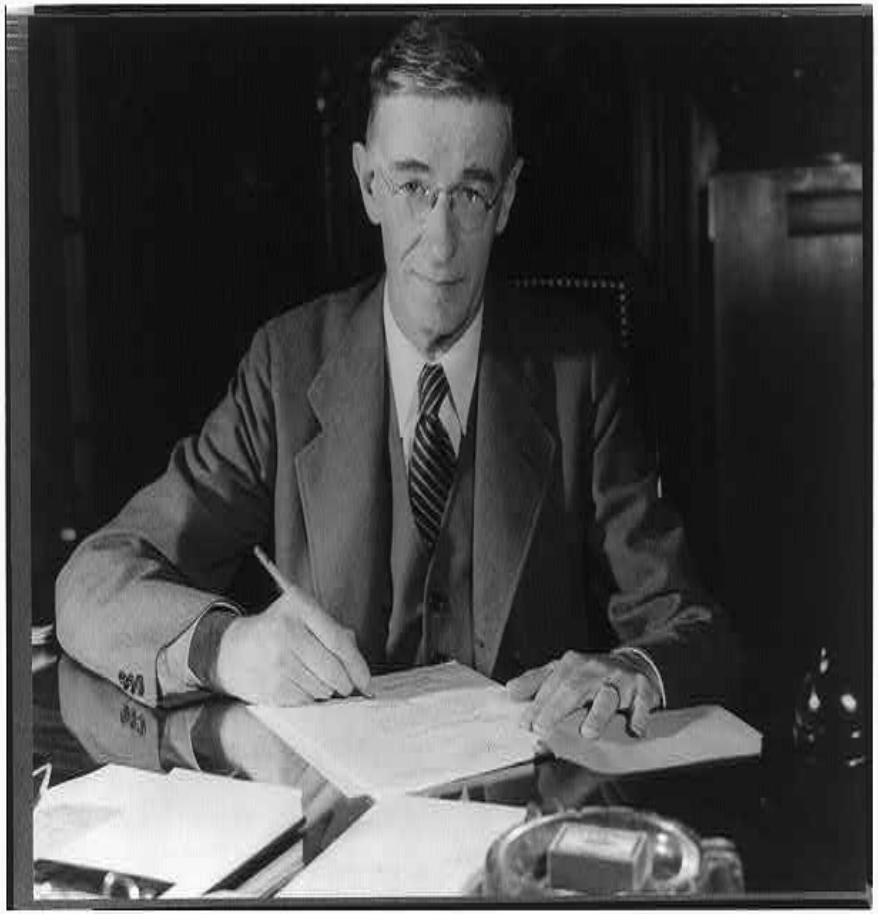

Average Population Growth by Average January Temperature
(Quintiles)
Average Population Growth by County, 2000-2010
0
.02
.04
.06
.08
.1
1
2
3
4
5

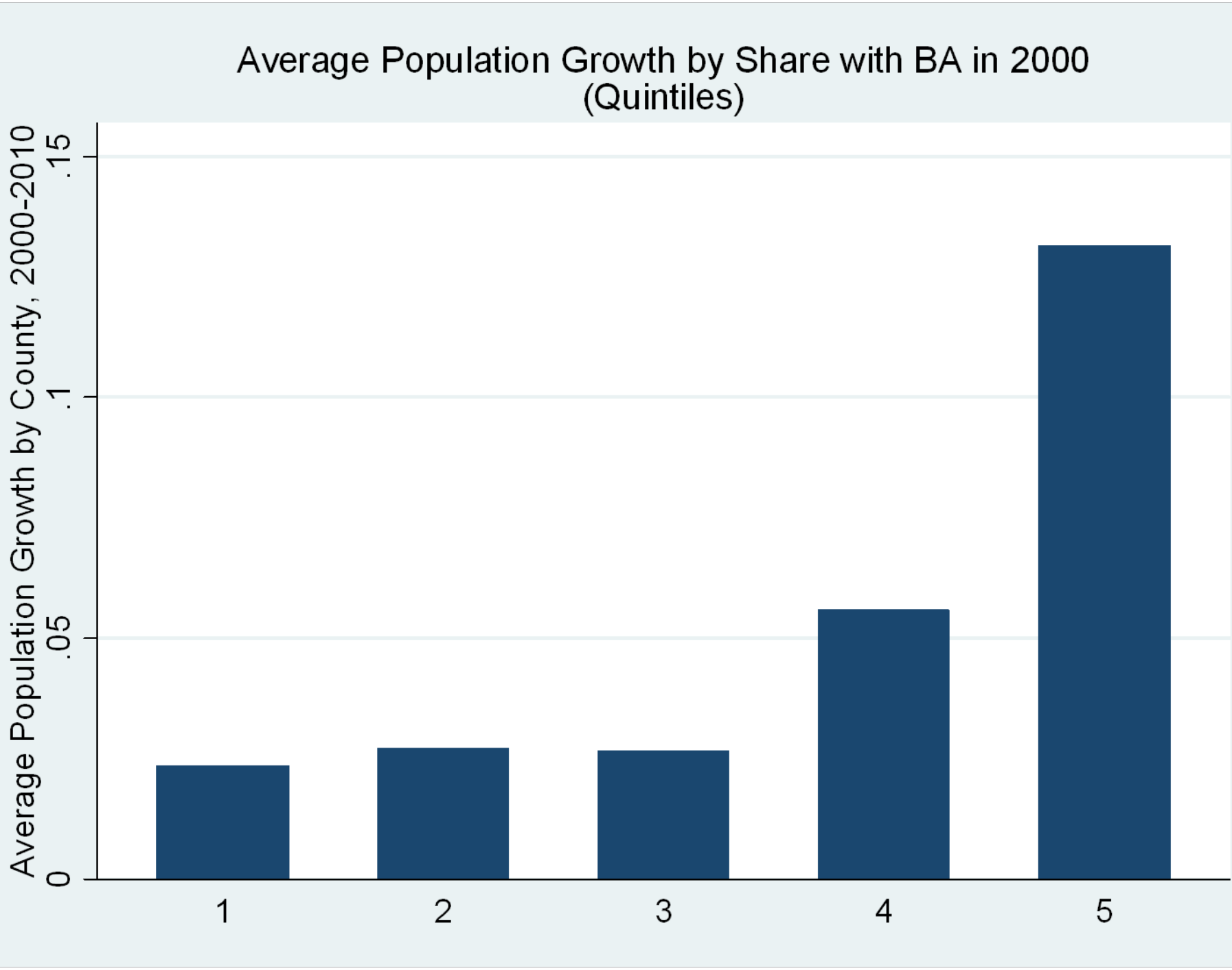
Temperature and Growth: Large Cities



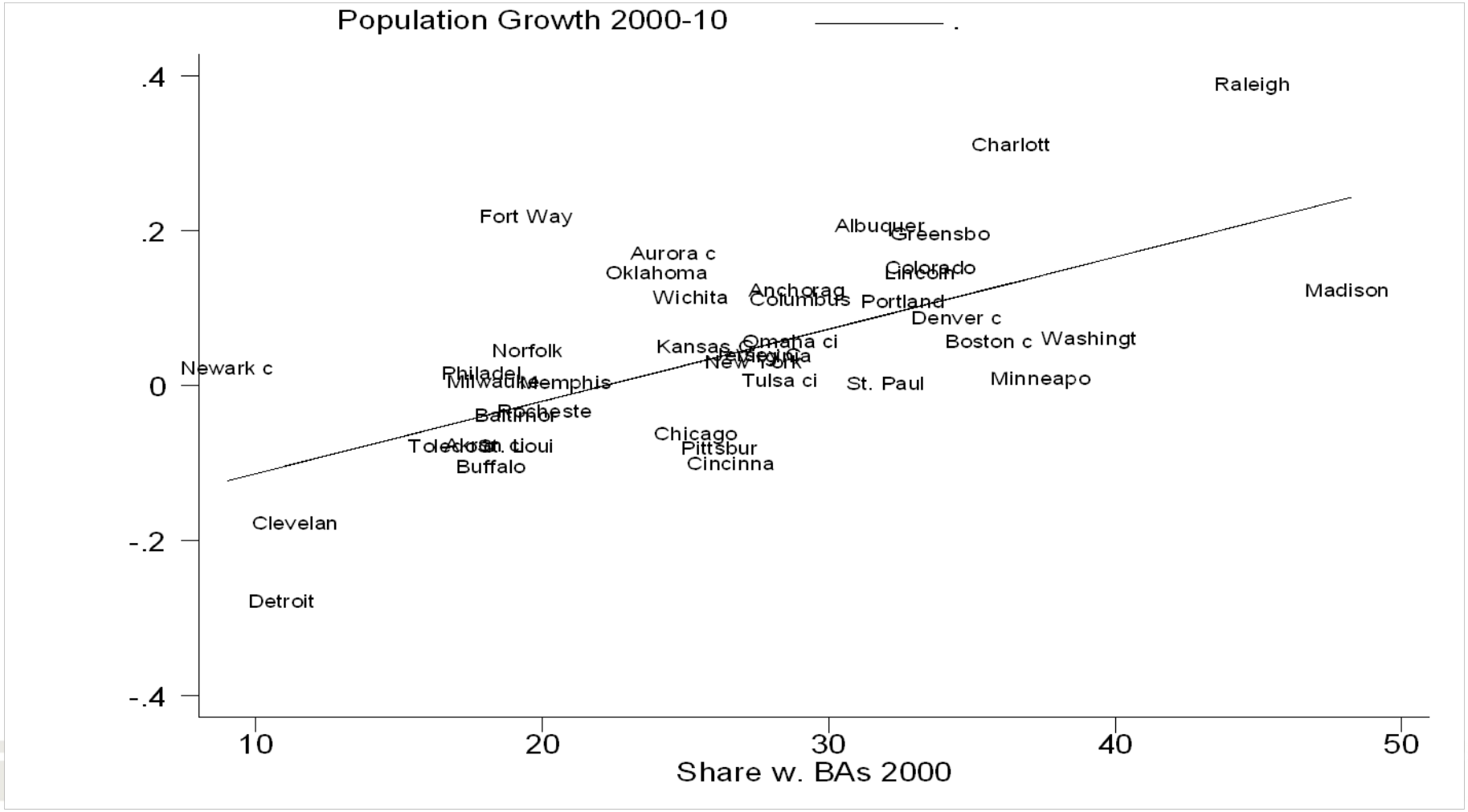
Temperature and Growth: Small Cities



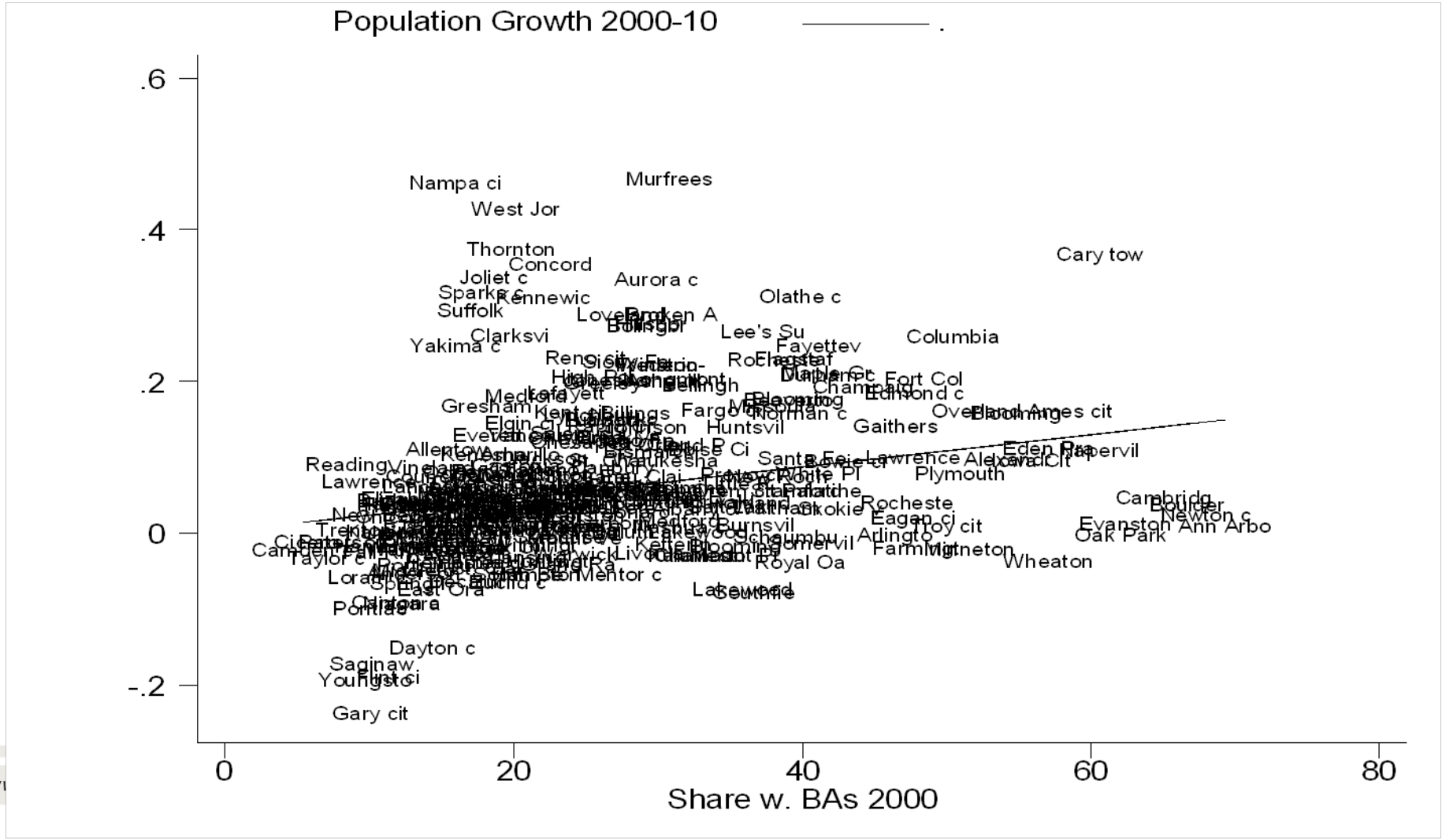



Average Population Growth by Share with BA in 2000
(Quintiles)
Average Population Growth by County, 2000-2010
0
.05
.1
.15
1
2
3
4
5

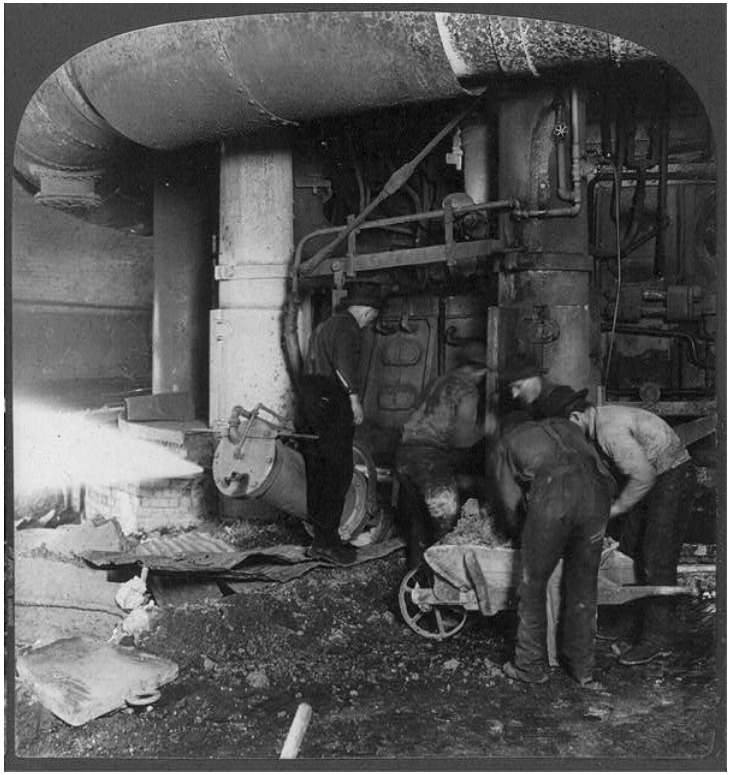
College Education and Growth in Larger (over 200k), Colder Cities

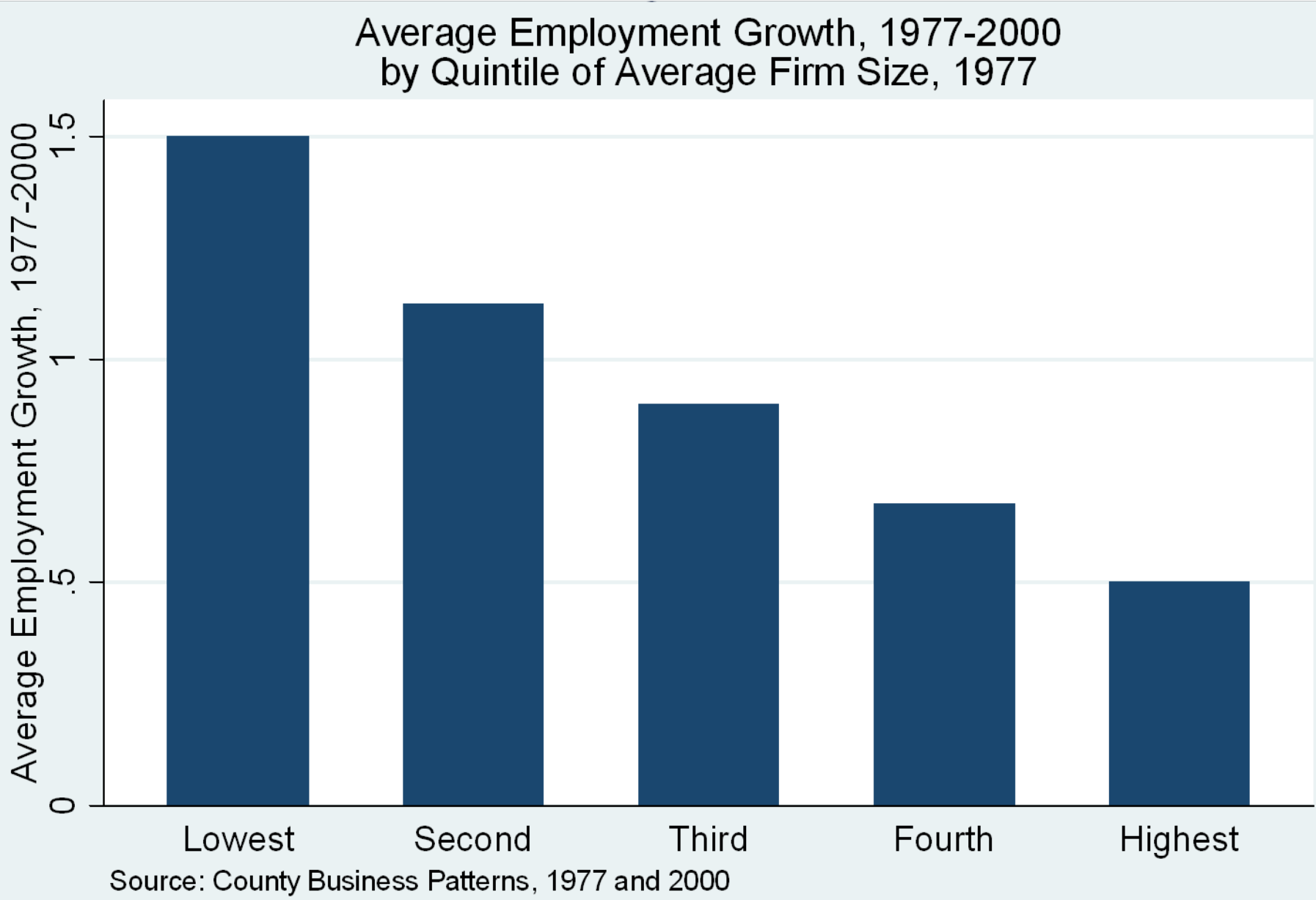


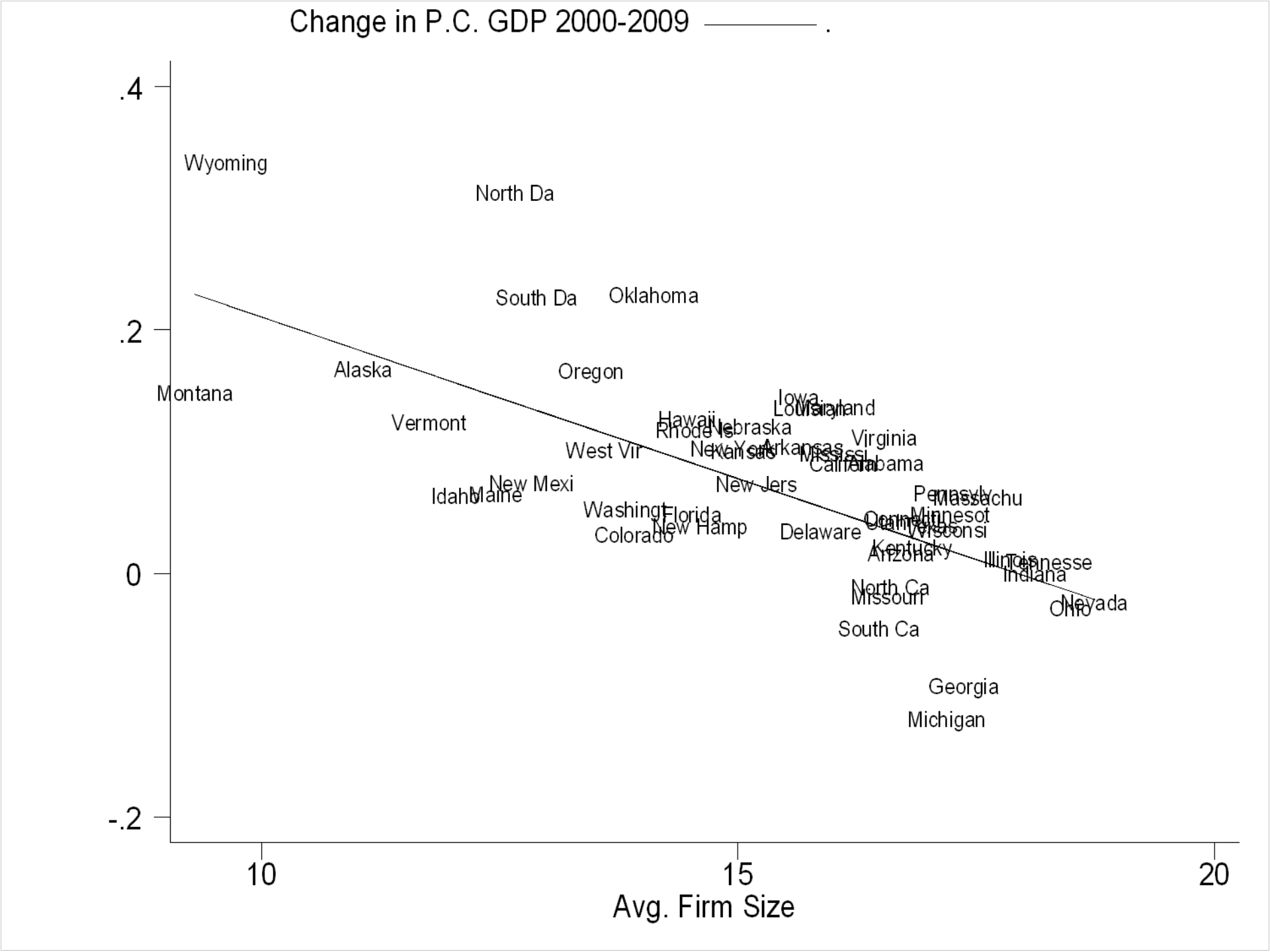
College Education and Growth: Colder, Smaller Cities



Chinitz: Contrasts in Agglomeration: New York and Pittsburgh




Average Employment Growth, 1977-2000
by Quintile of Average Firm Size, 1977
Average Employment Growth, 1977-2000
0
.5
1
1.5
Lowest
Second
Third
Fourth
Highest
Source: County Business Patterns, 1977 and 2000

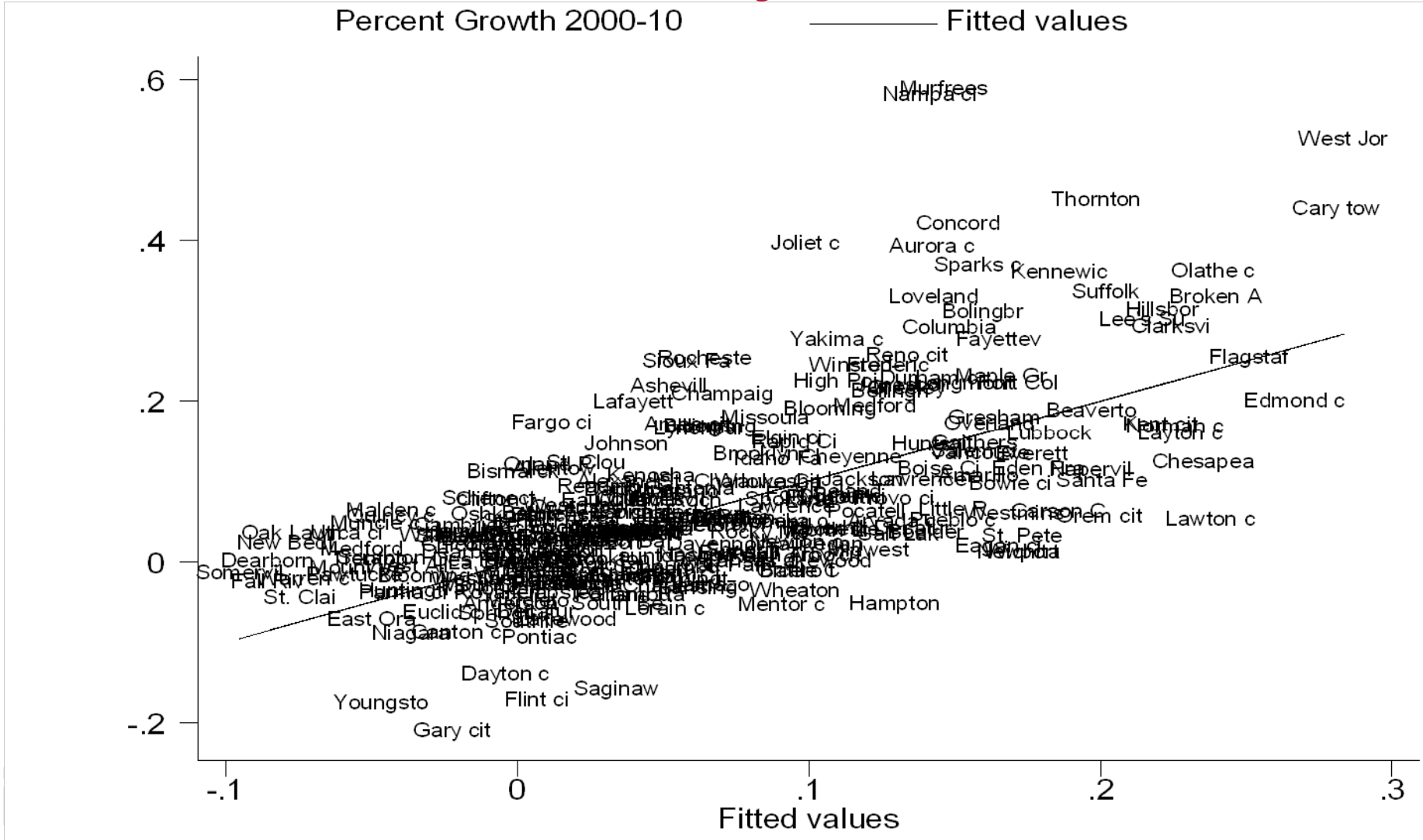

Change in P.C. GDP 2000-2009
.4
.2
0
-.2
10
15
20
Avg. Firm Size
Wyoming
North Da
South Da
Oklahoma
Alaska
Oregon
Montana
Vermont
Hawaii
Virginia
West Vir
New Mexi
Idaho
Maine
New Jers
Florida
Colorado
Delaware
Kentucky
Arizona
Indiana
North Ca
Missouri
Ohio
Nevada
South Ca
Georgia
Michigan

What Does the Model Teach Us?

Five variables explain about 40 percent of the growth rates in colder (under 40 degrees), smaller (under 200k) cities.

- January Temperature still matters– 10 degrees, 5 percentage points more growth.
- Share with HS degrees– 10 percentage points is 6.1 percentage points more growth.
- Also,
  - Households with kids (positive),
  - Latin American (positive), and
  - Density (negative).

A Statistical Model of Cold, Small City Growth

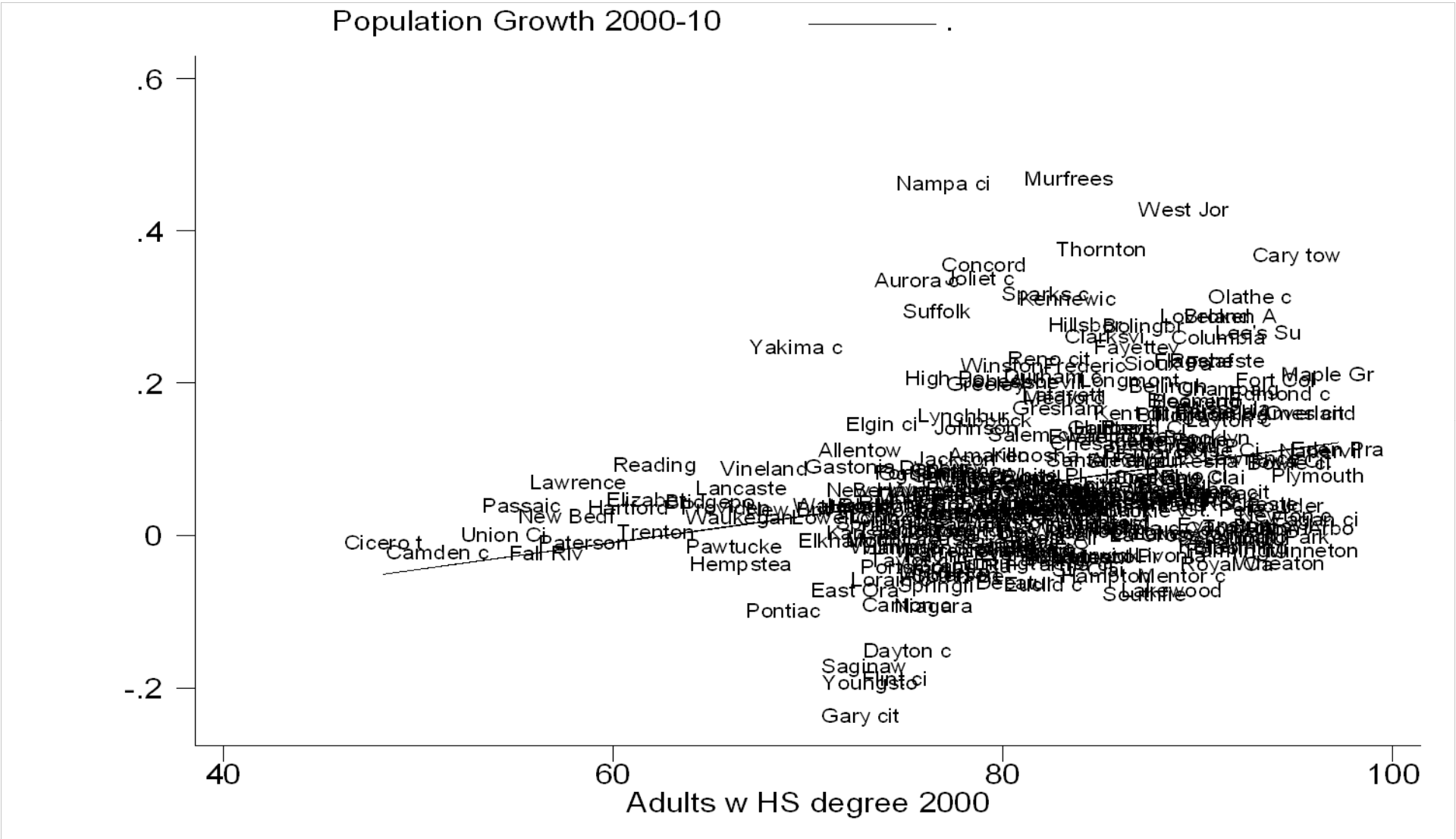


Income vs. Population Growth

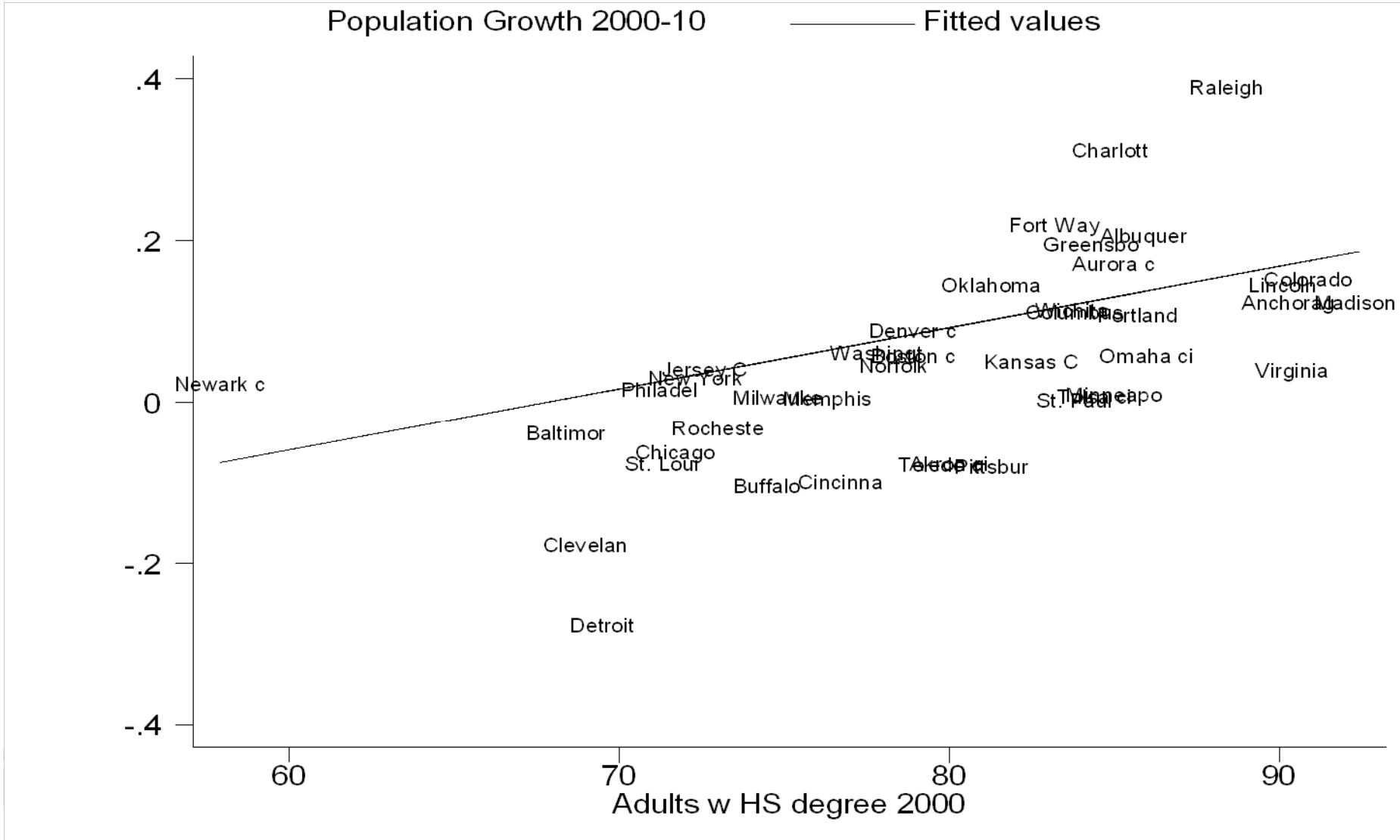
Population Growth and Income Growth move weakly together (income data is imperfect).

- January Temperature still matters– 10 degrees, 1.9 percentage points more growth.
- Share with HS degrees– 10 percentage points is 3 percentage points more growth.
  - Share with BA degree is slightly more powerful
- Share Latin American is also positive but not strong
  - Households with kids doesn't matter
  - Density is weakly negative

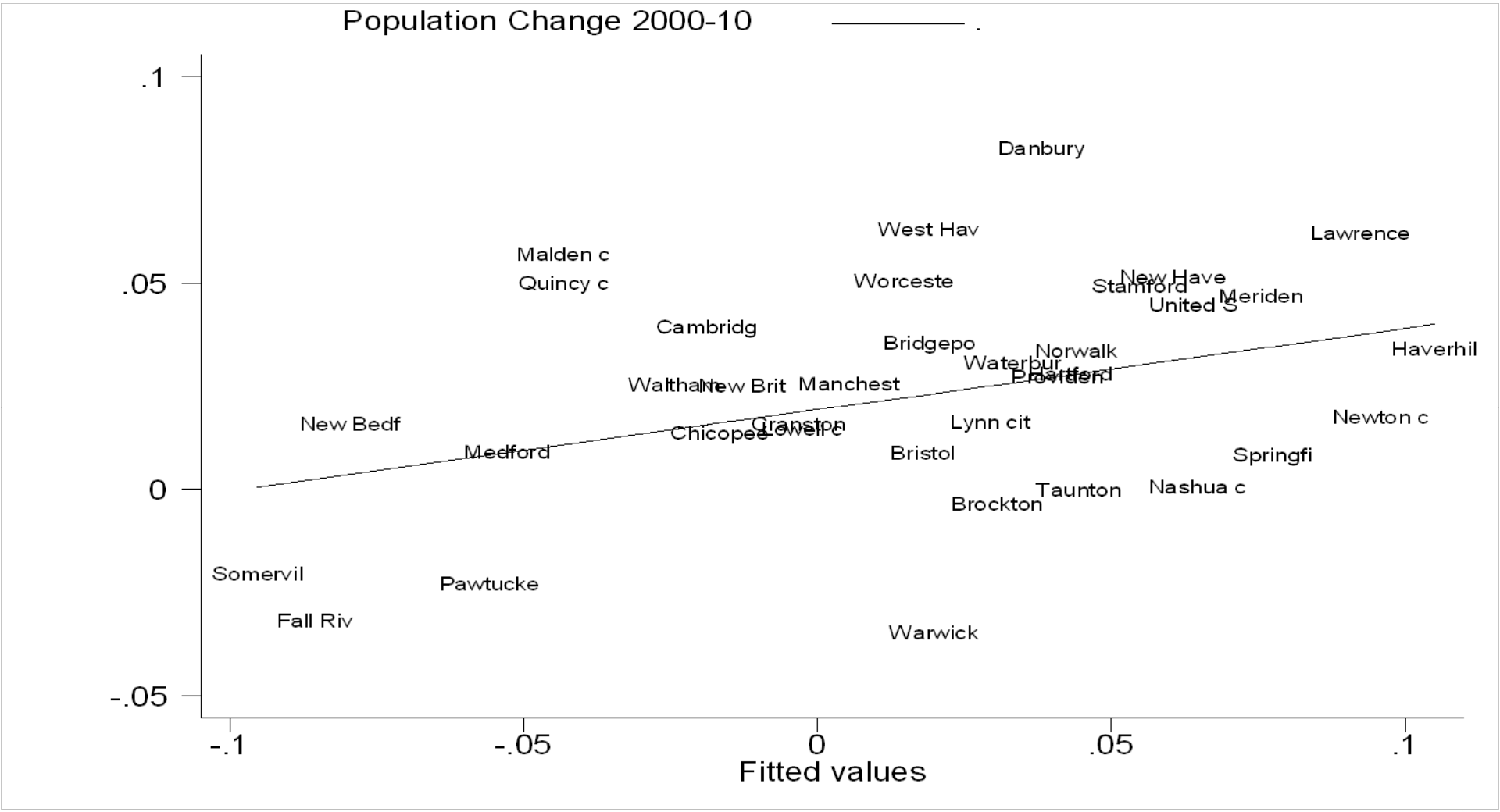
HS Graduation and Growth: Smaller, Colder Cities



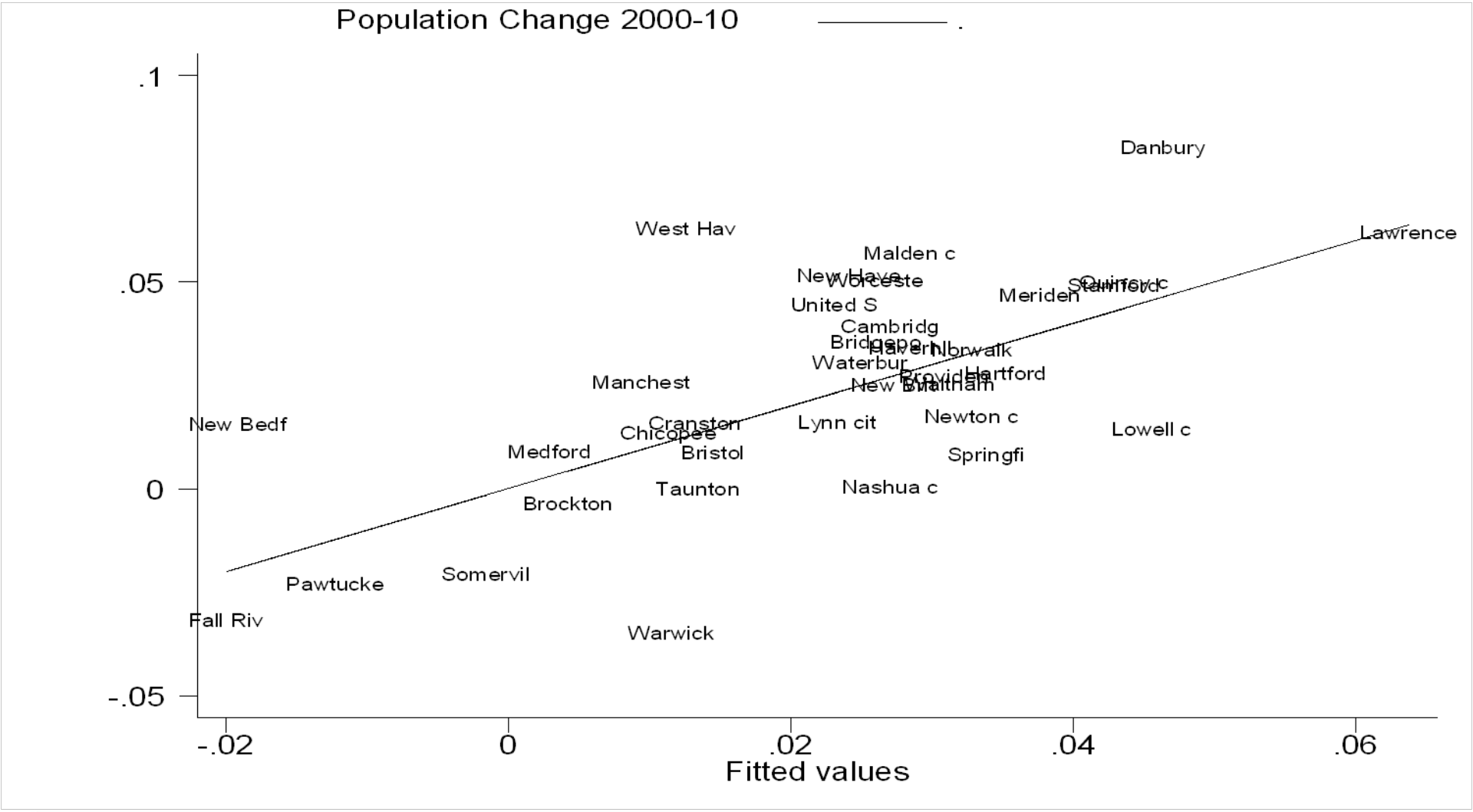
HS Graduation and Growth: Colder, Larger Cities



The Imperfect New England Fit



The New England Model



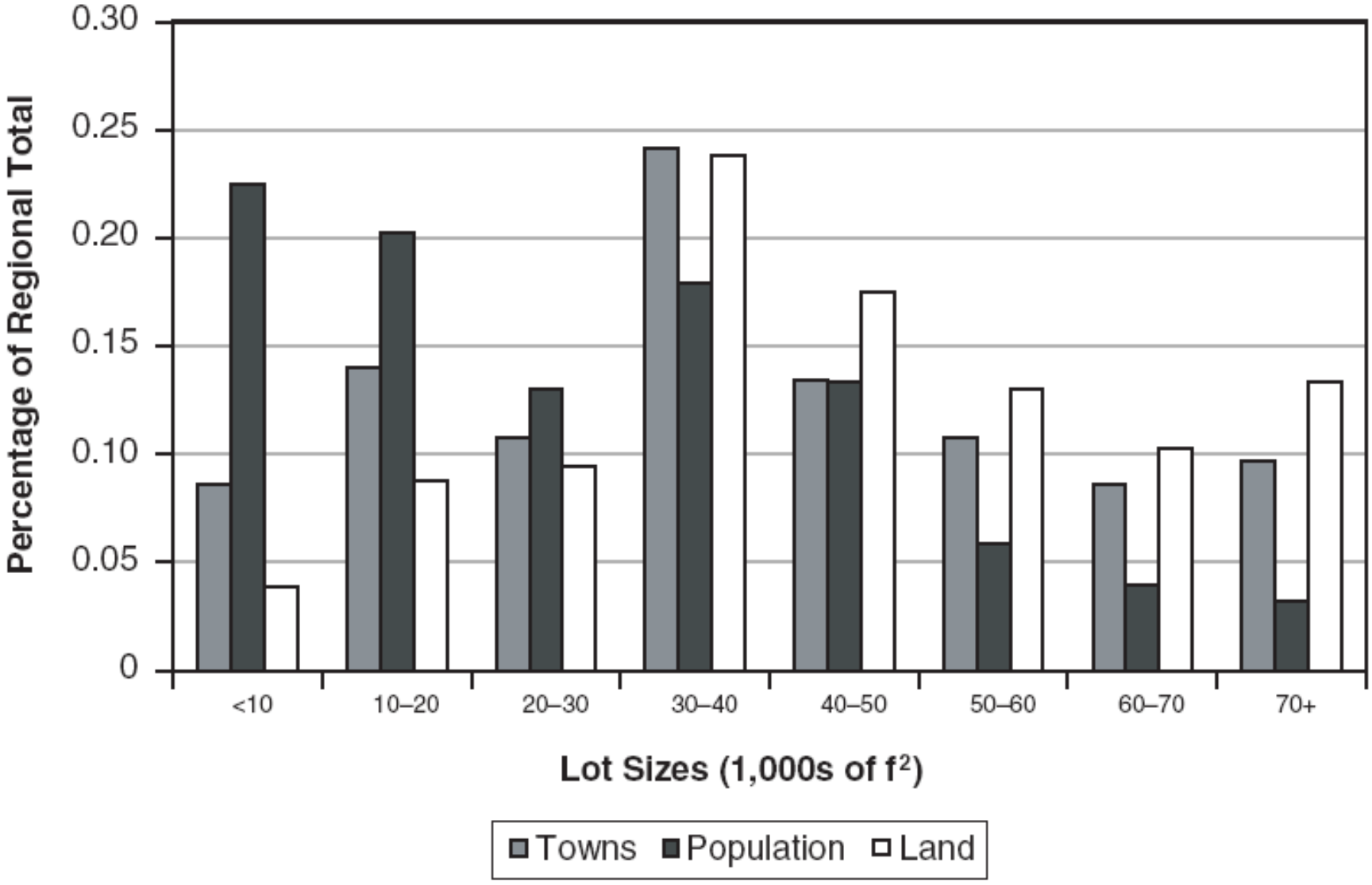
Four Variables

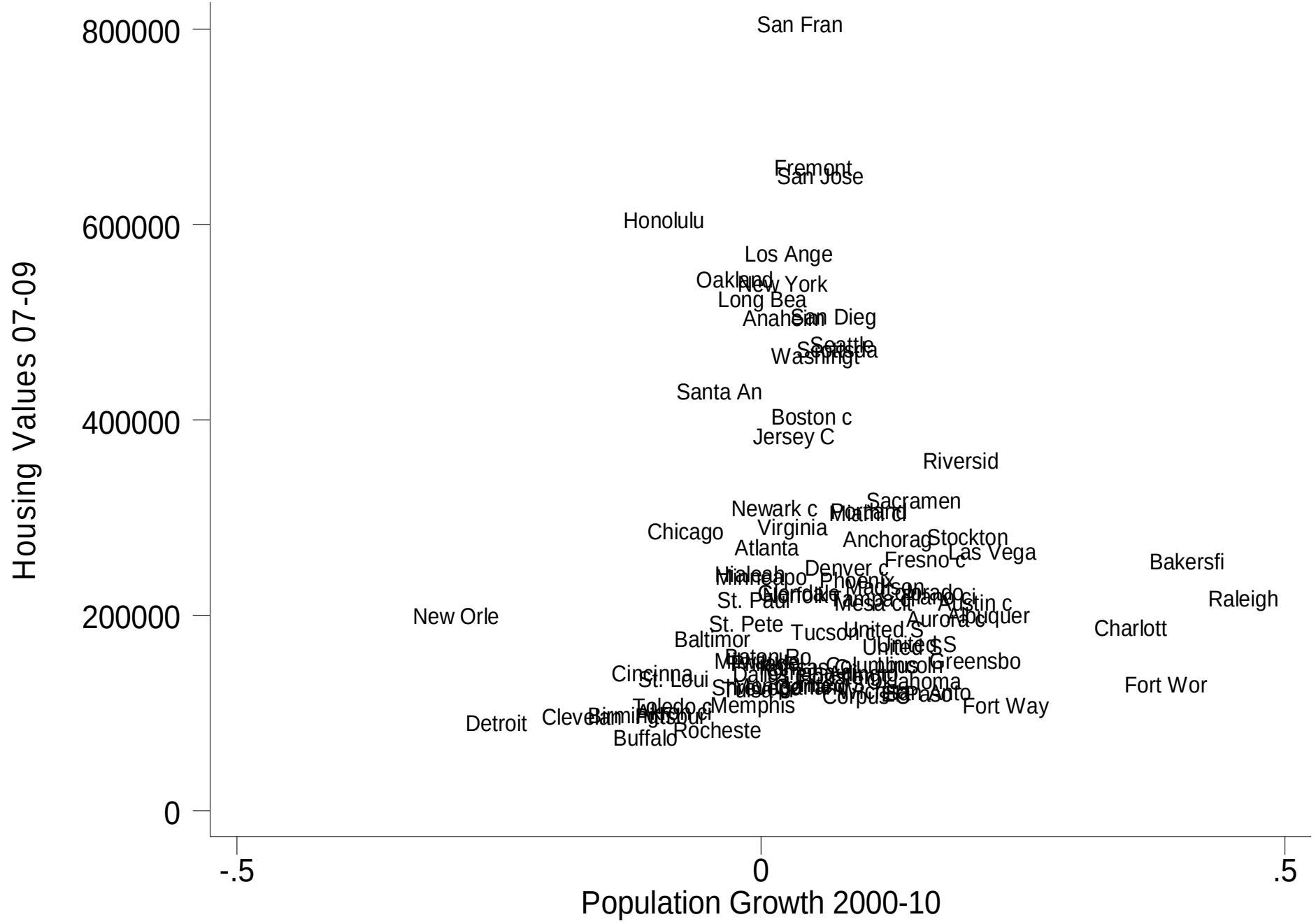
- Share with HS degree– 10 percentage points higher is 1.2 percent more growth.
- Share that is Latin American– ten percentage points higher is 1.8 percent more growth.
- Share that is Asian American– ten percentage points higher is 3.2 percent more growth.
- Density continues to be negative but not in Massachusetts itself.
- Little impact of households with kids or January temperature (in NE).
- Model is different also because the coefficients are different even when they have the same sign– doing well in New England is just different than in Texas.

Why Don't The Other Variables Matter in Massachusetts?

- In much of America, the lower density cities are growing as part of the ongoing growth of sunbelt sprawl. There is sprawl in MA but not within cities.
- Temperature doesn't matter that much between Lowell and Worcester.
- But immigration is crucial– cities remain gateways and Boston's high prices make entry more difficult.

Distribution of Single-Family Minimum Lot Sizes, Greater Boston Area, 2000




800000
600000
400000
200000
0
Housing Values 07-09
-.5
0
.5
Population Growth 2000-10
San Fran
Fremont
San Jose
Honolulu
Los Ange
Oakland
New York
Long Bea
Anaheim
San Dieg
Seattle
Washingt
Santa An
Boston c
Jersey C
Riversid
Sacramen
Newark c
Portland
Miami
Chicago
Virginia
Anchorag
Stockton
Atlanta
Las Vega
Fresno c
Bakersfi
Denver c
Phoenix
Madison
Raleigh
St. Paul
Mesa cit
Austin c
New Orle
Aurora c
Albuquer
St. Pete
Tucson
United S
Charlott
Baltimor
Greensbo
Cincinna
Columbus
St. Loui
Fort Wor
Memphis
Corpus C
Fort Way
Toledo c
Detroit
Cleveland
Rocheste
Buffalo

Policies for Healthy Small Cities

- Skills
- Entrepreneurship
- Attracting people– often immigrants– who have a healthy demand for urban options.
  - Quality of Life is an Economic Development Policy
- Housing policy matters.
- Smokestacks or currently hot industrial options (green jobs) typically are failures.