

CHAPTER 6

AFFORDABLE
HOUSING

This chapter examines the performance of the eight case study states on two key smart growth indicators: improved housing affordability and an expanded mix of housing options for both moderate- and low-income households.¹ Using census data from 1990 and 2000, the analysis covers a total of 690 counties—148 in the smart growth states and 542 in the other selected states. The measures used to assess affordability or cost burden are the changes (or differences) in shares of renters and owners paying at least 30 percent of income for housing.² The measures used to assess changes in the mix of housing options are the percentages or shares of rental and multifamily units added over the decade as a proportion of total units constructed (see Appendix 6).

STATE-SPECIFIC HOUSING REQUIREMENTS

Planning requirements for affordable housing vary widely across the four smart growth states. New Jersey has by far the most extensive intervention in this area under the *Mt. Laurel* decisions, a series of state supreme court rulings interpreting the New Jersey Constitution. Municipalities that zone are required to provide

realistic opportunities for construction of low- and moderate-income housing on a regional, fair-share basis.

The New Jersey Fair Housing Act of 1985 also established the Council on Affordable Housing (COAH) to oversee the affordable housing program for municipalities electing to participate in it (N.J.S.A. 52:27D-301 *et seq.*). Municipal master plans must incorporate a housing element that includes an inventory of existing housing, analysis of existing and projected housing demand, analysis of the municipality's fair share of affordable housing, and designation of the land most appropriate for affordable housing development (N.J.S.A. 40:55D-28, 52:27D-310). Municipalities seeking options to fulfill their *Mt. Laurel* requirements can gain "substantive certification" from COAH of their housing elements and fair-share plans (the implementation vehicles for the housing elements). Once a municipality obtains this certification, it has an affirmative defense in any exclusionary zoning lawsuit.

The housing planning requirements of the other three smart growth states have less top-down state government

involvement. In Florida, local comprehensive plans include a housing element. The Department of Community Affairs, the state land planning agency, establishes administrative rules for the content of the housing elements, and reviews and approves all comprehensive plans for compliance with the rules (Fla. Stat. 163.3177; Fla. Admin. Code 9J-5.010 [Housing Element]).

Oregon's affordable housing requirements flow from Goal 10 (Housing) of Oregon's Statewide Planning Goals and Guidelines (Ore. Admin. Rules 660-015-0000(10)), as well as the Oregon Revised Statutes (Ore. Rev. Stat. 197.295 *et seq.*, 197.303, 197.307). These statutes require local comprehensive plans to address and provide for "needed housing," defined as "housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels" (Ore. Rev. Stat. 197.303).

The Maryland smart growth program, based on the 1992 planning law (contained in the Maryland Annotated Statutes, Article 66B) and the 1997 Priority Funding Areas Act (SB 389), has no overall mandated housing planning function (Knaap and Frece 2007). The 1997 law has only been implemented since 1998.³ A 2006 amendment to the planning laws established a program that authorized, but did not mandate, that local comprehensive plans include a workforce housing element to be eligible for certain state monies (HB 1160).

The four other selected states (Colorado, Indiana, Texas, and Virginia) had no housing planning requirements of any kind during the analysis period, although Virginia amended its enabling statutes in 2003 to address affordable housing in city and county comprehensive plans (Code of Virginia § 15.2-2223 (2007); the 2003 amendments appear at 2003 Va. Ch. 811).

COMPARATIVE HOUSING COST TRENDS

The analysis begins by examining changes in housing values, as well as median housing costs as a proportion of household income, during the 1990s. As table 6.1 shows, median housing values rose in all eight case study states. Compared with the U.S. median increase of 42.4 percent, Oregon posted the largest gain (118.3 percent) and New Jersey the smallest (4.2 percent). Nevertheless, New Jersey had the highest median housing value among the eight states during the decade.

Table 6.1 Median Housing Values and Percent Change by State, 1990–2000

	1990 Median Housing Value	2000 Median Housing Value	Percent Change
SMART GROWTH STATES			
Florida	\$76,500	\$93,200	21.8
Maryland	115,500	143,300	24.1
New Jersey	161,200	167,900	4.2
Oregon	66,800	145,800	118.3
OTHER SELECTED STATES			
Colorado	\$82,400	\$160,100	94.3
Indiana	53,500	92,500	72.9
Texas	58,900	77,800	32.1
Virginia	90,400	118,800	31.4
United States	\$78,500	\$111,800	42.4

Note: Includes all owner-occupied units.

Source: U.S. Census Bureau (1990a, table H061A; 2000a, table H85).

Table 6.2 Median Gross Rent as a Percent of Household Income, 1989–1999

	1989	1999	Percent Change
SMART GROWTH STATES			
Florida	28.0	27.5	-1.8
Maryland	25.4	24.7	-2.8
New Jersey	26.3	25.5	-3.0
Oregon	25.5	26.9	5.5
OTHER SELECTED STATES			
Colorado	26.1	26.4	1.1
Indiana	24.3	23.9	-1.6
Texas	24.6	24.4	-0.8
Virginia	25.8	24.5	-5.0
United States	26.4	25.5	-3.4

Source: U.S. Census Bureau (1990a, table H050A; 2000a, table H70).

The housing cost ratio for renters (defined as median gross rent as a percent of household income in table 6.2), fell in six of the eight states as well as nationwide between 1989 and 1999. In contrast, the renter cost burden in Oregon was up 5.5 percent over the decade. Florida had the highest median renter cost burden of the eight states in both 1989 and 1999, while Texas and Indiana had the lowest.

Table 6.3 Median Selected Monthly Owner Costs as a Percent of Household Income, 1989–1999

	1989	1999	Percent Change
SMART GROWTH STATES			
Florida	22.3	22.8	2.2
Maryland	21.1	22.2	5.2
New Jersey	23.4	23.7	1.3
Oregon	20.4	23.2	13.7
OTHER SELECTED STATES			
Colorado	22.5	22.6	0.4
Indiana	16.7	19.3	15.6
Texas	20.9	20.1	-3.8
Virginia	21.9	21.4	-2.3
United States	21.0	21.7	3.3

Source: U.S. Census Bureau (1990a, table Ho58A; 2000a, table H95).

Meanwhile, the ratio of selected median monthly housing costs to household income for owners with mortgages rose in six of the eight states, most significantly in Indiana and Oregon.⁴ As table 6.3 indicates, New Jersey had the highest median owner cost burden in both 1989 and 1999, even though the state's ratio increased only modestly over the decade.

HOUSING MIX AND AFFORDABILITY

Examining averages for the two groups of states, as well as across the individual states, provides some perspective on the effects of smart growth programs on affordable housing. As table 6.4 indicates, the share of rental units added during the 1990s does not appear to differ significantly between the two groups of states, although multifamily additions in the smart growth states were much higher than in the other selected states. But smart growth programs generally did not improve affordability. Indeed, the share of owners paying at least 30 percent of income for housing increased more in states with smart growth programs than in those without. Among other mitigating facts, however, it should be

Table 6.4 Changes in Housing Mix and Affordability, 1989–1999

	PERCENT OF HOUSING UNITS ADDED 1990–2000		PERCENT OF COST-BURDENED OWNERS			PERCENT OF COST-BURDENED RENTERS		
	Rental	Multi-family	1989	1999	Change	1989	1999	Change
SMART GROWTH STATES								
Florida	13.2	12.4	18.8	21.5	2.7	36.6	35.2	-1.4
Maryland	12.7	22.8	18.4	22.2	3.8	33.2	33.3	0.1
New Jersey	32.2	30.4	26.3	28.2	1.9	39.1	37.5	-1.6
Oregon	13.9	18.7	16.7	22.5	5.8	33.0	35.5	2.5
Average	18.0	21.1	20.0	23.6	3.6	35.5	35.4	-0.1
OTHER SELECTED STATES								
Colorado	14.8	6.6	21.8	22.8	1.0	33.8	33.7	-0.1
Indiana	16.0	18.5	11.8	15.0	3.2	30.2	27.8	-2.4
Texas	16.8	8.0	16.9	16.8	-0.1	31.0	27.1	-3.9
Virginia	25.7	16.8	16.7	18.8	2.1	30.5	29.7	-0.8
Average	18.3	12.5	16.8	18.4	1.6	31.4	29.6	-1.8

Note: Cost-burdened owners and renters are defined as those paying 30 percent or more of income for housing.

Source: U.S. Census Bureau (1990a; 2000a).

noted that the smart growth states had higher market demand and higher average incomes than the other selected states.

The data in table 6.4 also highlight which states were driving the trends in housing mix and affordability. Among the smart growth states, the share of rental units added over the period was much higher in New Jersey than in Florida, Maryland, or Oregon. This suggests that there are state-specific differences in development patterns or housing policies. On the multifamily side, additions in Maryland and New Jersey were considerably higher than in the other two smart growth states, while those in Indiana and Virginia were considerably higher than in the other two selected states.

Oregon stands out for its reduced affordability, with shares of owners paying at least 30 percent of income for housing increasing by 5.8 percent—at least 2 percentage points more than in any other state from 1989 to 1999. Housing in Texas became more affordable for owners, while rental housing became more affordable in all states except Maryland and Oregon.

Table 6.5 Percent of Counties with Increase or No Change in Housing Mix and Affordability, 1990–2000

	Rental Units	Multifamily Units	Cost-Burdened Owners	Cost-Burdened Renters
SMART GROWTH STATES				
Florida	10	30	88	33
Maryland	29	58	96	54
New Jersey	43	53	67	10
Oregon	11	78	94	81
OTHER SELECTED STATES				
Colorado	38	51	63	54
Indiana	38	73	95	27
Texas	31	51	46	25
Virginia	39	50	76	45

Source: U.S. Census Bureau (2003).

COUNTY-LEVEL COMPARISONS

Table 6.5 presents the percent of counties in each state that increased or had no change in their stocks of rental and multifamily units, along with the shares of cost-burdened owners and renters paying 30 percent or more for housing. The share of counties with increased or constant rental and multifamily units in smart growth states should be higher than in the other selected states on these measures, assuming that some type of statewide program was in place to expand the supply of affordable housing and broaden the availability of rental and multifamily units. But aside from New Jersey, which had proportionately the most counties showing positive gains in rental housing, the change in the rental supply in the smart growth states was contrary to expectations. In fact, more than one-third of counties in three states without smart growth programs performed well in terms of rental gains.

Growth in multifamily units was similar across the two groups of states. About three-quarters of counties in one smart growth state (Oregon) and in one other state (Indiana) showed

increases in multifamily units, while the share of counties in most states (except Florida) were closer to the 50 percent range.

Aside from Texas, the vast majority of counties in the remaining seven states had increased shares of owners paying 30 percent or more of their incomes for housing. On the rental side, Oregon had an especially large share (81 percent) and New Jersey the lowest share (10 percent) of counties that saw increases in cost-burdened renter households.

In summary, New Jersey was the only smart growth state to add significantly to its rental and multifamily stocks and to post limited increases in shares of cost-burdened households.

CORRELATION AND REGRESSION ANALYSES

Bivariate correlations were used to assess the strength of the relationships between housing mix and affordability (dependent variables) and seven independent variables: state smart growth program status; per capita income; population; median housing

Table 6.6 Bivariate Correlations (Pearson Correlation) for Housing Mix and Affordability, by County

Variables	SHARE OF HOUSING UNITS ADDED IN 1990–2000		CHANGE IN SHARE OF COST-BURDENED HOUSEHOLDS	
	Rental	Multifamily	Owners	Renters
Smart Growth State	.002	.101**	.240**	.161**
Income per Capita, 1989	.076*	.189**	.094*	.173**
Population, 1990	.165**	.166**	.047	.073
Median Housing Value, 1990	.125**	.220**	.019	.122**
Population Density, 1990	.463**	.311**	.062	-.008
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	.132**	.222**	-.002	.182**
Job Density, 2000	.356**	.284**	.020	-.036

N = 669

** = $p < .01$

* = $p < .05$

Table 6.7 Expected Signs of Independent Variables

Variable	Rationale	EXPECTED SIGNS			
		SHARE OF HOUSING UNITS ADDED IN 1990–2000	CHANGE IN SHARE OF COST-BURDENED HOUSEHOLDS		
			Rental	Multi-family	Owners
Smart Growth State (Dummy)	If smart growth programs do not include an affordable housing requirement and constrain land supply, housing cost burdens should increase in the absence of a planning requirement for affordable housing. Presence of program should diversify the mix of housing only if the program actively encourages compact development and multifamily housing.	+	+	+	+
Per Capita Income, 1989		-/+	-/+	-/+	-/+
Percent Change in Per Capita Income, 1989–1999	Rise in per capita income should lower share of income spent on housing	-/+	-/+	-	-
Population, 1990		-/+	-/+	-/+	-/+
Percent Change in Population, 1990–2000	Population growth should place pressure on housing stock, reducing affordability	-/+	-/+	+	+
Median Housing Value, 1990	Rise in value should increase share of income spent on housing	-/+	-/+	+	+
Population Density, 1990	Greater density should increase housing costs and mix of housing	+	+	+	+
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	Educated population should enhance desire for mix of housing; may be attracted to high-cost housing areas	+	+	+	+
Job Density, 2000	Areas with high job density should be less affordable and include more multifamily and rental units	+	+	+	+

value; population density; share of the population age 25 and over holding at least a bachelor's degree; and job density. In theory, absent some type of planning requirement that emphasizes the production of affordable housing, state smart growth programs should correlate positively with the changes in shares of renters and owners paying 30 percent or more of household income for housing, and positively with increases in rental and multifamily stocks in 2000.

Table 6.6 indicates that smart growth policies were significantly related to multifamily additions as well as to the lack of affordability for both owners and renters, but not to rental unit additions. Per capita income in 1989 was significantly correlated with all four dependent variables. Correlations with population, median housing value, population density, percentage of population 25 years and older with at least bachelor's degrees, and job density were mixed. Both population density and job density were significantly correlated with rental and multifamily additions.

REGRESSION ANALYSIS

Correlations offer a snapshot of how smart growth policy and other factors influenced affordability and housing mix during the study period, but they cannot untangle the interdependent relationships among variables, nor can they account for interstate differences and changes in conditions over the decade.

The regression analysis results shown in table 6.7 addresses these shortcomings by isolating a set of variables that measure initial conditions by county (per capita income in 1989; population in 1990; median housing value in 1990; and population density in 1990). A second set of variables examines the percent change in two of these variables (per capita income and population) over the decade.⁵ Finally, a third set of variables (percent of the population age 25 and older with a bachelor's degree or higher, and job density in 2000) accounts for conditions at the end of the decade.

As table 6.8 indicates, county population density in 1990 was by far the strongest predictor of increases in rental housing. The proportion of people age 25 and older with at least a bachelor's degree also had a positive relationship. Curiously, job density had a negative relationship with rental additions.

Table 6.8 Relationship of Share of Rental Housing to Total Housing Added and County Characteristics

Variable	Unstandardized Coefficient
(Constant)	31.592 (9.648)
Smart Growth State	-2.327 (3.227)
Per Capita Income, 1989	-1.220 (.897)
Percent Change in Per Capita Income, 1989–1999	-.111 (.099)
Population, 1990	-.002 (.006)
Percent Change in Population, 1990–2000	.057 (.070)
Median Housing Value, 1990	-.142 (.086)
Population Density, 1990	.026*** (.003)
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	.564** (.224)
Job Density, 2000	-1.211** (.421)

R² = 0.247, N = 669

*** = p < .001

** = p < .01

* = p < .05

Standard deviations are in parentheses.

Table 6.9 Relationship of Share of Multifamily Housing to Total Housing Added and County Characteristics

Variable	Unstandardized Coefficient
(Constant)	3.585 (7.815)
Smart Growth State	4.589~ (2.614)
Per Capita Income, 1989	-.311 (.726)
Percent Change in Per Capita Income, 1989–1999	.055 (.080)
Population, 1990	.003 (.005)
Percent Change in Population, 1990–2000	-.079 (.057)
Median Housing Value, 1990	-.010 (.070)
Population Density, 1990	.007** (.002)
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	.491** (.181)
Job Density, 2000	.023 (.333)

R² = .118, N = 669

** = p < .01

~ = p < .10

Standard deviations are in parentheses.

This suggests that where the concentration of jobs was high, shares of rental units fell. The existence of a state smart growth program had a nonsignificant negative effect, indicating that smart growth programs did not necessarily have a relationship to rental housing production—a finding supported by table 6.6.

On the multifamily side, table 6.9 shows that the existence of a state smart growth program, 1990 county population density, and percent of people age 25 and older holding at least bachelor's degrees all had significant relationships with positive signs. In contrast, there was no significant relationship to population growth in 1990–2000.

According to table 6.10, the share of county population age 25 and older with at least a bachelor's degree is the strongest

predictor of increases in the share of rent-burdened households. This finding suggests that as the share of educated residents increased, so did the lack of affordability of rental housing units. Such residents may have higher incomes and their demand may increase housing values generally. The presence of a state smart growth program also showed a significant positive relationship to the share of cost-burdened renters. Job density and percent change in per capita income had significant negative relationships, reducing the rent-burdened share.

In table 6.11, the dependent variable is the change in the percentage of owners paying 30 percent or more of household income for housing. The presence of a smart growth program was one of the strongest predictors of higher shares of cost-burdened

Table 6.10 Relationship of Change in Share of Cost-Burdened Renters and County Characteristics

Variable	Unstandardized Coefficient
(Constant)	-3.761 (1.702)
Smart Growth State	1.761** (.569)
Per Capita Income, 1989	.135 (.158)
Percent Change in Per Capita Income, 1989–1999	-.033~ (.017)
Population, 1990	-.001 (.001)
Percent Change in Population, 1990–2000	-.015 (.012)
Median Housing Value, 1990	-.011 (.015)
Population Density, 1990	.000 (.000)
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	.157*** (.039)
Job Density, 2000	-.203** (.073)

R² = .086, N = 669

*** = p < .001

** = p < .01

* = p < .05

~ = p < .10

Standard deviations are in parentheses.

Table 6.11 Relationship of Change in Share of Cost-Burdened Owners and County Characteristics

Variable	Unstandardized Coefficient
(Constant)	-.182 (1.198)
Smart Growth State	2.639*** (.401)
Per Capita Income, 1989	.463*** (.111)
Percent Change in Per Capita Income, 1989–1999	-.022~ (.012)
Population, 1990	-.001~ (.001)
Percent Change in Population, 1990–2000	-.017~ (.009)
Median Housing Value, 1990	-.050*** (.011)
Population Density, 1990	.001* (.000)
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	.013 (.028)
Job Density, 2000	-.067 (.051)

R² = .125, N = 669

*** = p < .001

** = p < .01

* = p < .05

~ = p < .10

Standard deviations are in parentheses.

homeowners, along with per capita income and county population density. County median housing value in 1990 and change in per capita county income had significant negative relationships to the share of cost-burdened homeowners.

COST BURDEN ANALYSIS BY STATE

To determine the relationships between smart growth programs and changes in housing cost burdens among the states, exploratory regressions for renter- and owner-occupied housing (not shown here) suggested that New Jersey (among the smart growth

states) and Texas (among the other selected states) may have had the most affordable housing.

Two sets of stratified regressions were then performed to determine which independent variables affected the change in housing cost burdens. Regressions were run separately for the two groups of states. In the case of the smart growth states, New Jersey was used as the reference point against which to compare the dummy variables for the other three smart growth states, and Texas was the reference for the other states.

Table 6.12 focuses on the increase in share of cost-burdened renters. There were no significant relationships among the individual variables for the smart growth states, indicating that none of the variables expected to affect renter cost burden had a noticeable impact in these states. For the other selected states, however, two variables—percent change in county per capita income and percent of county population age 25 and older with at least bachelor's degrees—had significant relationships.

The results for owners, shown in table 6.13, were nearly identical except that median housing value was significantly related to the increase in owner cost burden for the other selected states, but had marginal significance for the smart growth states. Florida's change in cost burden for owner-occupied housing was less than New Jersey's (though not significantly so), and Oregon had the largest increase.

Why do the two groups of states react differently to demographic and economic factors in the stratified regressions? The statistical results suggest that affordability in states without smart growth programs tends to react to demographic and economic stimuli while affordability in smart growth states does not. Perhaps the policies pursued by the smart growth states dampened the effects of these factors.

Two final sets of pooled regressions were run with dummy variables for seven of the eight states (with Texas as the reference) for renter- and owner-occupied housing. As table 6.14 shows, Oregon again had the strongest statistical relationship with the increase in renter cost burden. Table 6.15 indicates that among the smart growth states Florida had the smallest increase in owner cost burden, and Oregon again had the largest.

In summary, the estimates generated by the stratified and pooled regressions are generally consistent. In the stratified regressions, rental units in New Jersey had low increases in cost burden in the 1990s. In the pooled regressions for renters, New Jersey also performed better than the other three smart growth states as well as Colorado and Virginia. In the owner household equations, both the stratified and pooled regressions identified Florida as having the smallest increase in cost burden among smart growth states.

Table 6.12 Relationship of Change in Share of Cost-Burdened Renters and County Characteristics—Stratified Regressions

Variable	Smart Growth States	Other Selected States
(Constant)	-7.734 (3.443)	-3.404 (1.997)
Per Capita Income, 1989	0.275 (.274)	0.108 (.195)
Percent Change in Per Capita Income, 1989–1999	0.064 (.039)	0.063** (.019)
Population, 1990	-0.001 (.002)	0.003 (.001)
Percent Change in Population, 1990–2000	-0.008 (.028)	-0.026 (.016)
Median Housing Value, 1990	-0.014 (.024)	-0.013 (.024)
Population Density, 1990	0.001 (.002)	-0.001 (.001)
Percent of Population Age 25 Years and Over with at Least a Bachelor's Degree, 2000	0.016 (.074)	0.170** (.051)
Job Density, 2000	-0.094 (.424)	-0.158 (.089)
SMART GROWTH STATES		
Florida	0.738 (1.767)	
Maryland	1.688 (1.439)	
New Jersey	NA	
Oregon	4.308* (1.820)	
OTHER SELECTED STATES		
Colorado		3.631*** (.886)
Indiana		1.783* (.732)
Texas		NA
Virginia		4.064*** (.750)

Note: New Jersey and Texas are treated as constants.

R² for smart growth states = 0.188, N = 148

R² for other selected states = 0.158, N = 521

*** = p < .001

** = p < .01

* = p < .05

~ = p < .10

Standard deviations are in parentheses.

Table 6.13 Relationship of Change in Share of Cost-Burdened Owners and County Characteristics—Stratified Regressions

Variable	Smart Growth States	Other Selected States
(Constant)	3.873 (2.543)	0.697 (1.368)
Per Capita County Income, 1989	0.203 (.203)	0.345* (.134)
Percent Change in Per Capita Income, 1989–1999	-0.031 (.029)	-0.043** (.013)
Population, 1990	0.001 (.001)	0.000 (.001)
Percent Change in Population, 1990–2000	0.013 (.021)	.010 (.011)
Median Housing Value, 1990	-0.033~ (.018)	-0.072*** (.017)
Population Density, 1990	0.002 (.001)	0.000 (.001)
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	-0.020 (.055)	0.076** (.035)
Job Density, 2000	-0.263 (.314)	-0.017 (.061)
SMART GROWTH STATES		
Florida	-0.390 (1.309)	
Maryland	1.312 (1.066)	
New Jersey	NA	
Oregon	3.082** (1.348)	
OTHER SELECTED STATES		
Colorado		2.179*** (.067)
Indiana		3.319*** (.501)
Texas		NA
Virginia		3.453*** (.514)

Note: New Jersey and Texas are treated as constants.

R² for smart growth states = 0.256, N = 148

R² for other selected states = 0.186, N = 521

*** = p < .001

** = p < .01

* = p < .05

~ = p < .10

Standard deviations are in parentheses.

Table 6.14 Relationship of Change in Share of Cost-Burdened Renters and County Characteristics—Pooled Regression

Variable	Unstandardized Coefficient
(Constant)	-3.778* (1.681)
Per Capita Income, 1989	.137 (.164)
Percent Change in Per Capita Income, 1989–1999	-.049** (.017)
Population, 1990	.001 (.001)
Percent Change in Population, 1990–2000	-.017 (.013)
Median Housing Value, 1990	-.020 (.018)
Population Density, 1990	.000 (.000)
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	.141** (.043)
Job Density, 2000	-.235** (.073)
SMART GROWTH STATES	
Florida	2.505** (.773)
Maryland	3.203* (1.288)
New Jersey	1.924 (1.749)
Oregon	6.024*** (.931)
OTHER SELECTED STATES	
Colorado	3.636*** (.834)
Indiana	1.661* (.685)
Virginia	3.800*** (.664)

Note: Texas is treated as a constant.

R² = .164, N = 669

*** = p < .001

** = p < .01

* = p < .05

Standard deviations are in parentheses.

Table 6.15 Relationship of Change in Share of Cost-Burdened Owners and County Characteristics—Pooled Regression

Variable	Unstandardized Coefficient
(Constant)	1.052 (1.157)
Per Capita Income, 1989	.297** (.113)
Percent Change in Per Capita Income, 1989–1999	-.043*** (.012)
Population, 1990	.000 (.001)
Percent Change in Population, 1990–2000	-.008 (.009)
Median Housing Value, 1990	-.059*** (.013)
Population Density, 1990	.001 (.000)
Percent of Population Age 25 and Over with at Least a Bachelor's Degree, 2000	.045 (.029)
Job Density, 2000	-.065 (.050)
SMART GROWTH STATES	
Florida	3.262*** (.532)
Maryland	4.985*** (.887)
New Jersey	4.552*** (1.205)
Oregon	6.079*** (.641)
OTHER SELECTED STATES	
Colorado	2.225*** (.574)
Indiana	3.261*** (.471)
Virginia	3.129*** (.457)

Note: Texas is treated as a constant.
 $R^2 = .234$, $N = 669$
 *** = $p < .001$
 ** = $p < .01$
 Standard deviations are in parentheses.

CONCLUSIONS

Housing markets and living patterns are complex, dynamic, and difficult to predict. Nonetheless, this analysis suggests that when statewide smart growth programs are present, they are likely to contribute to reduced affordability for both renters and owners, and to the growth in multifamily housing, but not necessarily rental housing.

New Jersey provides an exception to the generally poor showing of the smart growth states. Its statewide housing program, the progeny of several state supreme court decisions, clearly propelled the production of affordable housing, including the expansion of rental units. During the period from 1990 to 2000, New Jersey added more than 24,000 units of new construction and rehabilitated units under the affordable housing program overseen by the Council on Affordable Housing.⁶ While New Jersey's housing costs were high, its renter cost burden increased less during the 1990s than in the other smart growth states.

The following items summarize the analysis.

- Based on the means comparison, the share of rental units added during the 1990s did not seem to differ between states with and without smart growth programs. Additions of multifamily units, however, were much higher in smart growth states than in the other selected states.
- Based on the means comparison, housing in the four smart growth states became less affordable during the 1990s than in the four other selected states.
- In terms of ranks, New Jersey had the largest share of counties adding rental units over the decade, while Oregon had the largest share of counties adding multifamily units. Meanwhile, Maryland posted the largest share of counties with an increased proportion of cost-burdened owners, and Oregon had the largest share of counties with an increased proportion of cost-burdened renters.

- According to the correlation analyses, the presence of state smart growth programs had a statistically significant relationship with multifamily additions and with higher shares of both owners and renters paying at least 30 percent of income for housing.
- In the regression analysis for the two groups of states, most of the independent variables had a significant relationship when the change in share of owners paying at least 30 percent of household income for housing was the dependent variable. The presence of a state smart growth program was the strongest predictor of increases in owner cost burden.
- In the stratified regression analysis for individual states, housing affordability in states without smart growth programs tended to be associated with demographic and economic changes while affordability in states with smart growth programs did not. This suggests that the policies in individual smart growth states may have dampened the effects of these factors. In particular, Oregon's smart growth program (intended to support denser or more compact development) appears to have adversely affected both renter and owner affordability.
- In the pooled regression analysis, New Jersey performed better than the other three smart growth states as well as three of the other selected states in terms of renter affordability. Florida performed better than the other smart growth states in owner affordability.
- The share of the population age 25 and older with at least a bachelor's degree had a significant relationship with the dependent variables in three of the four regressions, suggesting that education strongly influences housing preferences and affordability levels. Specifically, this result implies that highly educated people are concentrated in high density areas (Florida 2000, 287–297).

These results, coupled with differences in program design and implementation among states, suggest that if smart growth programs are to have a positive impact on housing affordability or avert a negative impact from constraints on the land market, they must explicitly require the production of housing for low- and moderate-income households, rather than merely plan for it or ignore it completely. Simply stated, program design matters.

Notes

1. Many studies have addressed the topic of housing and smart growth, including the following: Anthony (2003); Calavita, Grimes, and Mallach (1997); Carruthers (2002); Connerly (2004); Cowan (2006); Downs (2002); Lewis (2004); Knaap and Frece (2007); Meck, Retzlaff, and Schwab (2003); Nelson et al. (2002).
2. The U.S. Department of Housing and Urban Development uses 30 percent of household income as the threshold for housing affordability. Note that the cost burden figure in HUD's definition is in excess of 30 percent, but the Census data are available only for categories of 30–34 percent and 35 percent or greater. See 24 Code of Federal Regulations, Subtitle A, Section 91.5 (Definitions).
3. The study by Carruthers (2002) does attempt to take into consideration the duration of growth management programs through the use of variables that account for the number of years the program mandate was in effect, using the date of enactment as a basis. The difficulty with this approach is the variation among states as to how the program mandate was implemented. For example, a law may be enacted, but administrative rules must be promulgated (Oregon and Florida) or a state plan adopted (New Jersey).
4. Monthly owner housing costs are the sum of payments for mortgages, real estate taxes, property insurance, utilities, and fuel. These costs also include monthly condominium fees or mobile home costs when applicable. This information was obtained from answers to the long-form questionnaire of the census (U.S. Census Bureau 2000).
5. Since percent change in population density is identical to percent change in population for any specific area, it was dropped as an independent variable. The model originally included each county's change in median housing value in 1990–2000 as an independent variable.

Because smart growth programs could affect housing value (and vice versa), which in turn could affect affordability, this introduced an added level of complexity to the analysis. The model was then run in a reduced form but with no new explanatory variables. As a result, the statistical significance of several independent variables changed. In particular, state smart growth program effects—as expected—became more pronounced, as tables 6.8 and 6.9 show.

6. Personal communication between Stuart Meck and Kathy McClinchy, Manager, Monitoring Unit, Division of Plan Administration, Council on Affordable Housing, State of New Jersey, July 13, 2007.

APPENDIX 6 INDICATORS AND DEPENDENT VARIABLES

1. Percentage (or share) of housing added that was rental:

$$\frac{(\Delta \text{Rental units } 1990-2000 / \Delta \text{Total housing units } 1990-2000) * 100}{100}$$
2. Percentage (or share) of housing added that was multifamily:

$$\frac{(\Delta \text{Multifamily units } 1990-2000 / \Delta \text{Total housing units } 1990-2000) * 100}{100}$$
3. Change (or difference) in percentage of owners paying $\geq 30\%$ of household income for housing [homeowner cost burden]:

$$(\text{Percentage of owner households paying } \geq 30\% \text{ in } 1999) - (\text{Percentage of owner households paying } \geq 30\% \text{ in } 1989)$$
4. Change or (difference) in percentage of renters paying $\geq 30\%$ of household incomes for housing [renter cost burden]:

$$(\text{Percentage of renter households paying } \geq 30\% \text{ in } 1999) - (\text{Percentage of renter households paying } \geq 30\% \text{ in } 1989)$$