




Homelessness and Housing Market Regulation

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- Relationship between local housing affordability and the risk of experiencing homelessness
 - Connection between local housing market regulation and housing costs
 - An empirical characterization of less and more regulated regional housing markets
 - Estimating the effect of regulatory stringency on point-in-time homelessness and assessing the importance of regulation as a cause of U.S. homelessness

Is homelessness in part a housing affordability problem?

- Confluence of personal problems among the homeless would suggest otherwise
- Period-prevalence estimates (Culhane et. Al. HMIS data from AHAR) suggest homelessness is a more widespread risk than one would otherwise believe.
- Empirical portraits of the homeless at a given point in time over-sample those in the midst of a long spell.

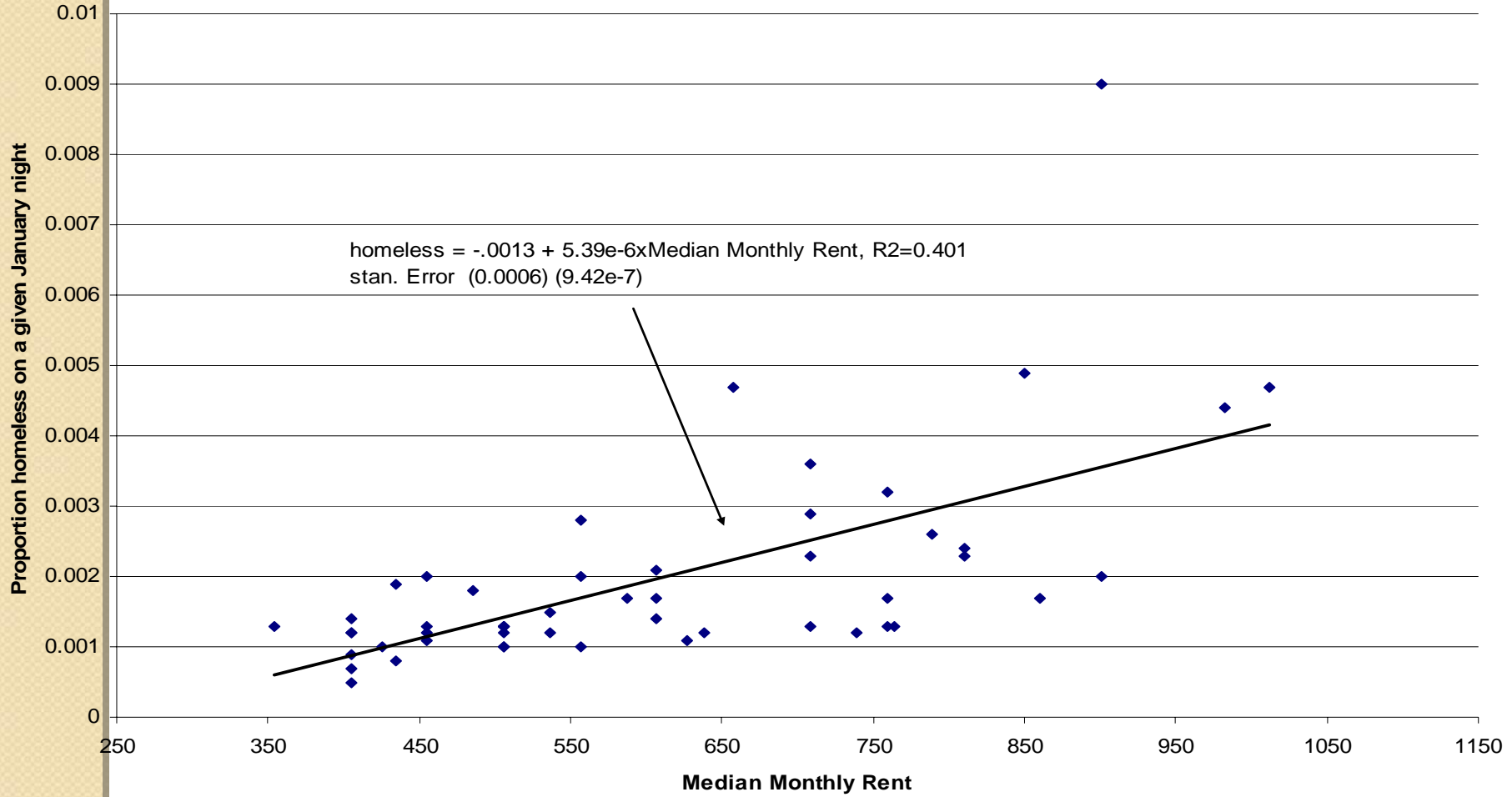
Housing costs and homelessness

- Expensive minimum quality housing
 - renders minimum quality housing prohibitively costly for some
 - may require too high a budget share for others
- Price of minimum quality housing will depend on
 - Supply of housing at higher quality levels (filtering)
 - Competition for housing across income groups
 - The distribution of income (O'Flaherty 1995, 1996)

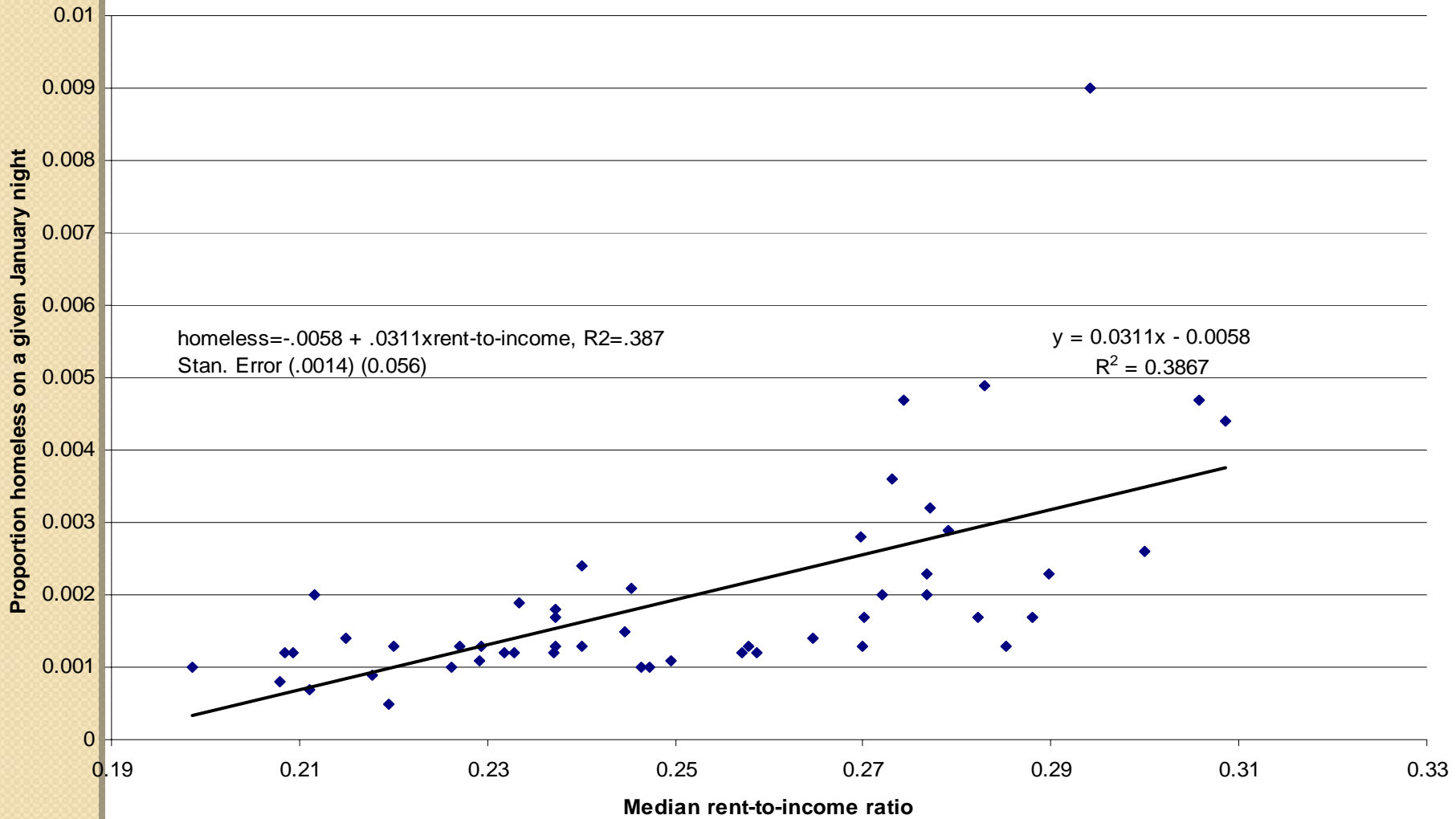
Empirical relationship between housing costs and homelessness

- Quigley, Raphael, and Smolensky (2001)
 - 1990 S-night
 - Burt (1992) enumeration
 - Continuum-of-Care counts for California during the 1990s
 - Longitudinal variation in the California AFDC-HAP program caseload

Scatter Plot of the Proportion of the State Population Homeless on a Single Night (2007) Against Median State Monthly Rent (2007)



Scatter Plot of the Proportion of the State Population Homeless on a Single Night (2007) Against Median State Rent-to-Income Ratios (2007)



Examples of local land use regulatory practices

- Minimum habitation standards
- Zoning that reduces quantity of land available for residential use
- Zoning regulating minimum density, “large-lot zoning”
- Growth controls and moratoria
- Exaction fees

Land use regulation and housing costs

- Impact on production costs
- Impact on housing supply
- Impact on housing demand

Empirical research on the impact of local regulation on housing market outcomes

- Glaeser and Gyourko (2003)
 - Measuring the “regulatory tax”
- Glaeser, Gyourko, and Saks (2005a, 2005b)
 - Regulatory tax has increased since 1970
 - Housing supply has become less price sensitive
- Quigley and Raphael (2005)
 - Housing is more expensive in more regulated California cities
 - Growth in the housing stock during the 1990s was slower in more regulated California cities
 - The elasticity of housing supply is smaller in more regulated California Cities

Empirical research on the impact of local regulation on housing market outcomes

- Mayer and Somerville (2000)
 - Supply elasticity lower in more regulated cities
- Malpezzi and Green (1996)
 - Rents and housing prices higher in more regulated cities, especially among the lowest income households.

Impacts of specific regulatory practices

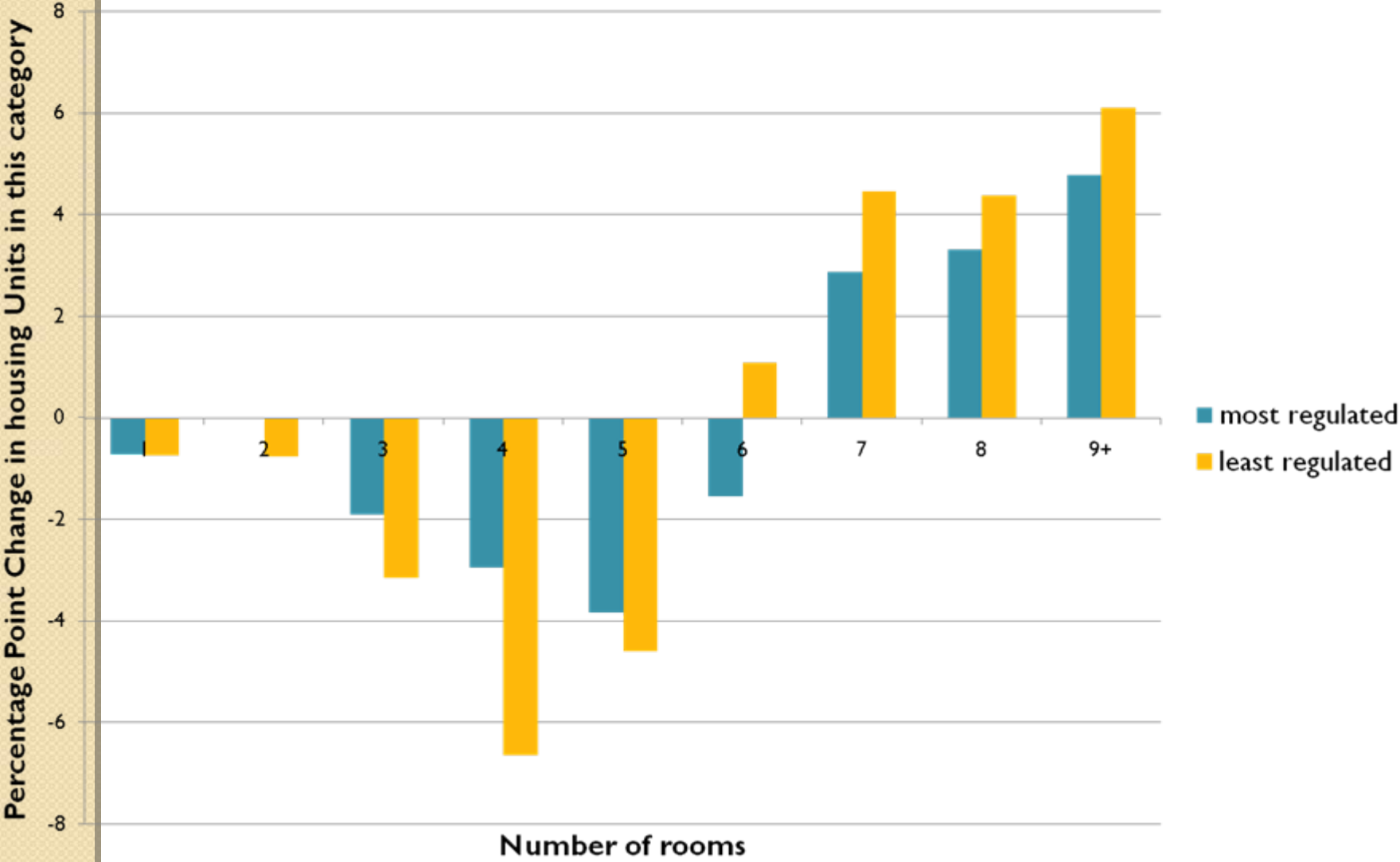
- Pendall (2000)
 - Low-density zoning, building permit caps, building permit moratoria, adequate public facilities ordinances, urban growth boundaries
- Glaeser, Gyourko, Saks (2005)
 - Height restrictions in NYC
- Green (1999)
 - Required street width, minimum front set backs, minimum lot width, storm sewer and sanitation requirements, water, curb, gutter, and sidewalk requirements

Empirical portrait of More and Less Regulated Regional Housing Markets

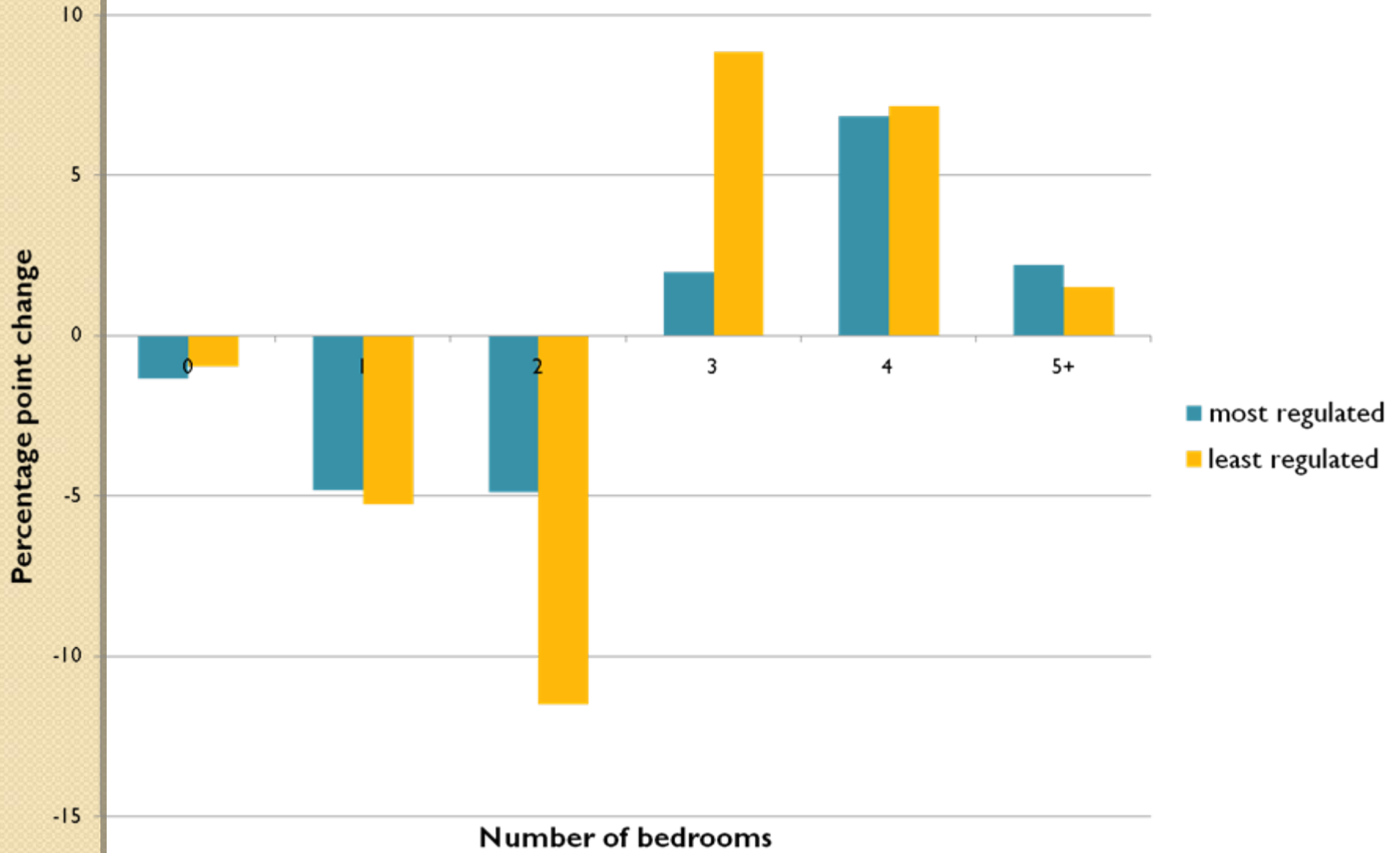
- Characterize state regulatory stringency with the Wharton Residential Land Use Regulation Index (WRLURI) tabulated by Gyourko, Saiz, and Summers (2006)
- Measure housing market characteristics using data from the 1970 1 percent sample of the Public Use Microdata Sample of the U.S. Census and the 2007 American Community Survey

Table 1									
Ranking of U.S. States by the WRURLI Land Use Regulation Index from Most to Least Regulated Local Housing Markets									
Most Regulated		Second Most Regulated		Medium Regulation		Second Least Regulated		Least Regulated	
Hawaii	2.32.	Colorado	0.48	New York	-0.01	Nevada	-0.45	Arkansas	-0.86
Rhode Island	1.58	Delaware	0.48	Utah	-0.07	Wyoming	-0.45	West Virginia	-0.90
Massachusetts	1.56	Connecticut	0.38	New Mexico	-0.11	North Dakota	-0.54	Alabama	-0.94
New Hampshire	1.36	Pennsylvania	0.37	Illinois	-0.19	Kentucky	-0.57	Iowa	-0.99
New Jersey	0.88	Florida	0.37	Virginia	-0.19	Idaho	-0.63	Indiana	-1.01
Maryland	0.79	Vermont	0.35	Georgia	-0.21	Tennessee	-0.68	Missouri	-1.03
Washington	0.74	Minnesota	0.08	North Carolina	-0.35	Nebraska	-0.68	South Dakota	-1.04
Maine	0.68	Oregon	0.08	Montana	-0.36	Oklahoma	-0.70	Louisiana	-1.06
California	0.59	Wisconsin	0.07	Ohio	-0.36	South Carolina	-0.76	Alaska	-1.07
Arizona	0.58	Michigan	0.02	Texas	-0.45	Mississippi	-0.82	Kansas	-1.13

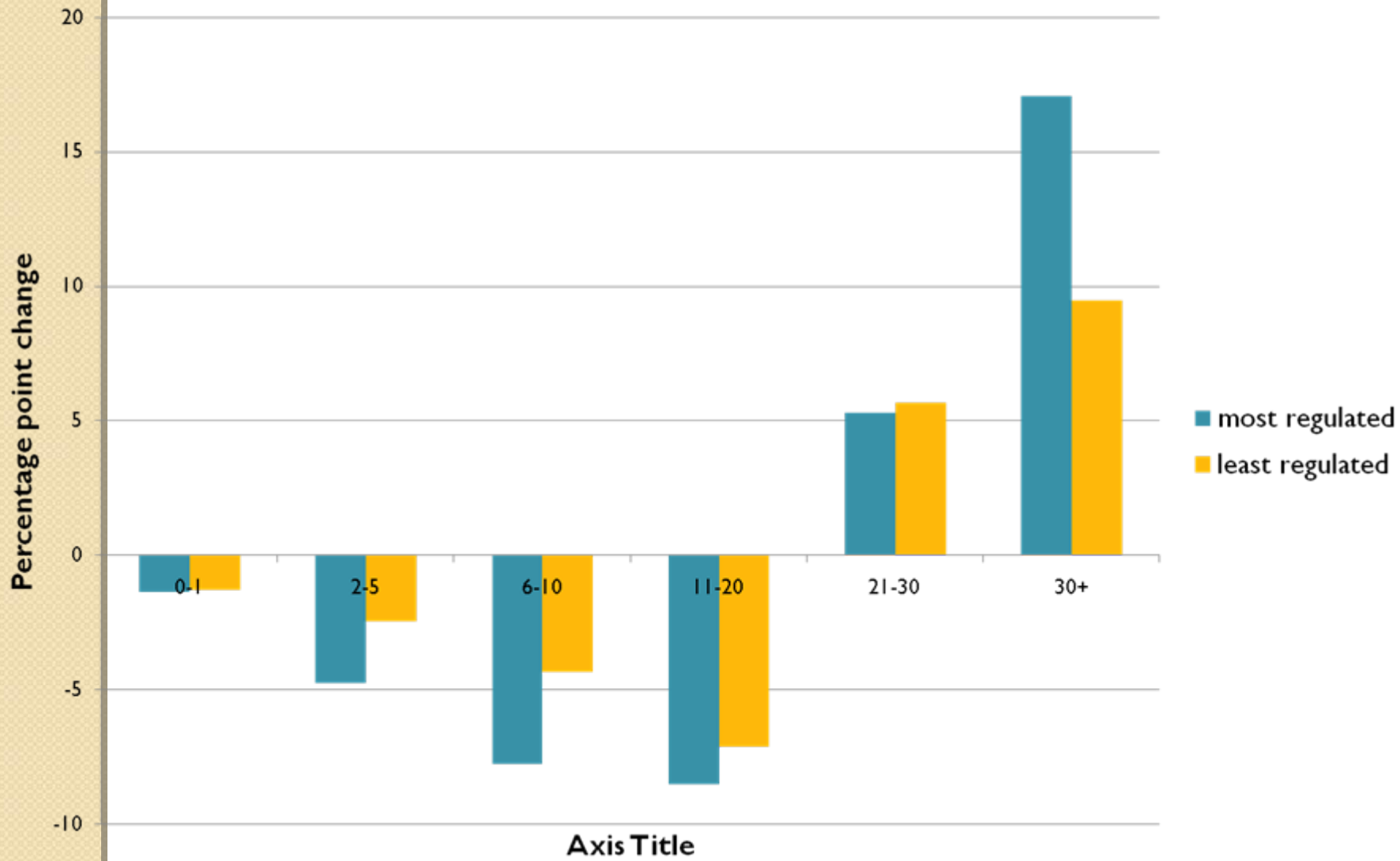
Change in the distribution of housing units defined by number of rooms between 1970 and 2007 in the most and least regulated housing markets



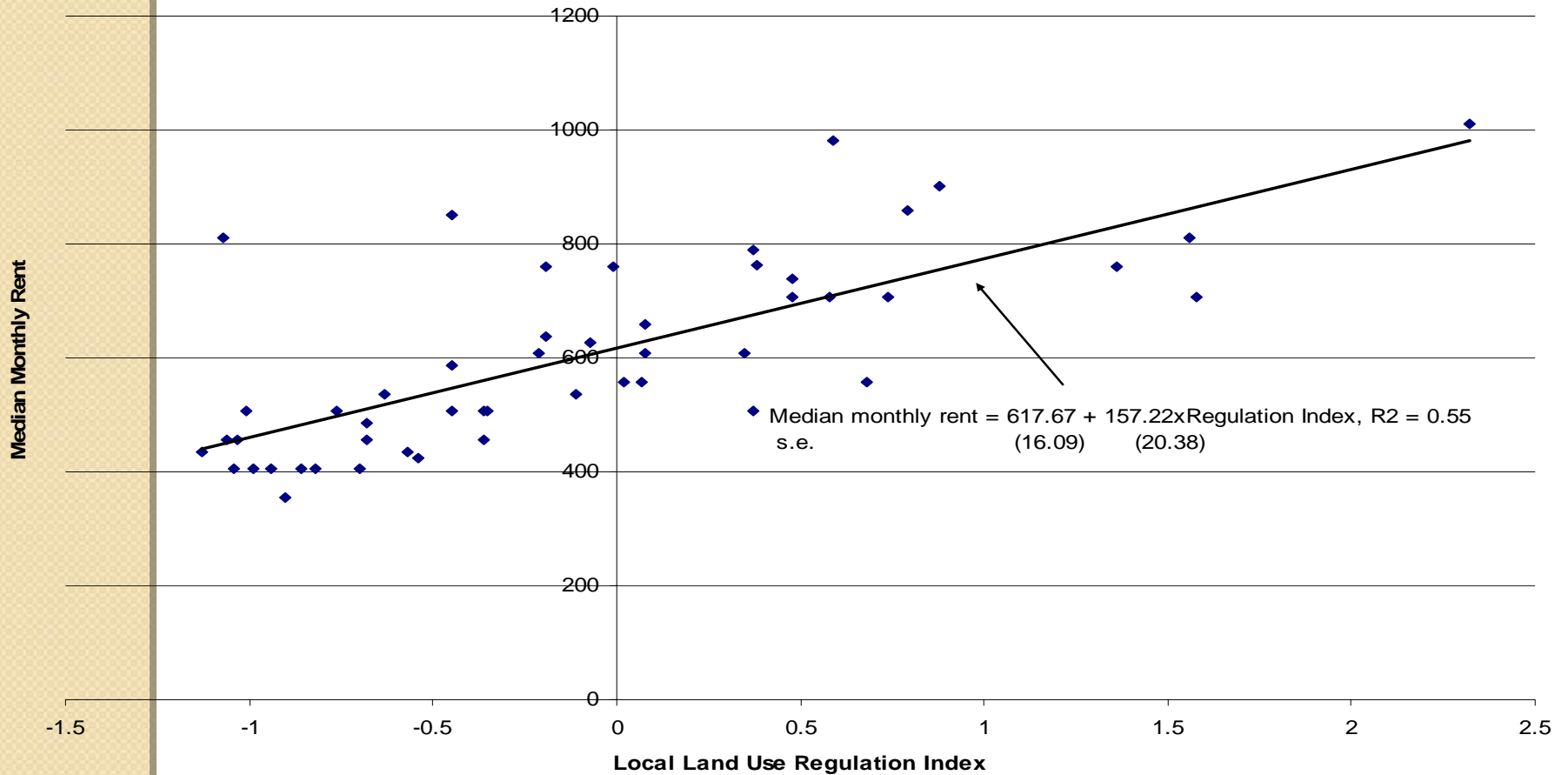
Change in the distribution of housing units by number of bedrooms between 1970 and 2007 in the most and least regulated housing markets



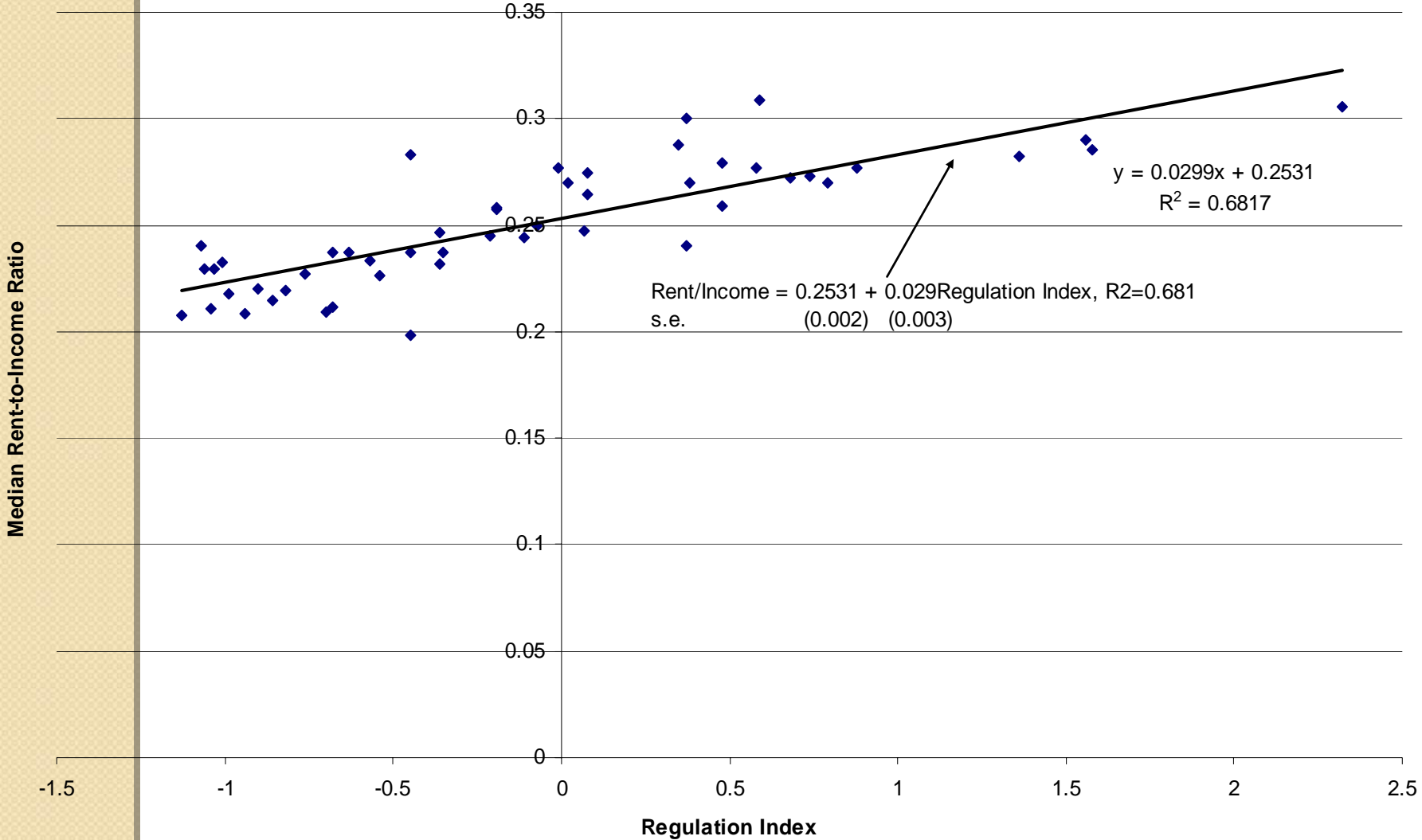
Change in the distribution of the housing stock between 1970 and 2007 by age of the unit for the most and least regulated housing markets



Scatter Plot of 2007 Median Monthly Rent at the State Level Against The Local Land Use Regulation Index



Scatter Plot of the Median 2007 State Median Ratio of Rent-to-Income Among Renters Against the Index of Regulatory Stringency



Measuring housing price appreciation by degree of regulatory stringency and position in the quality distribution

- Use the 1970 data to define housing quality groups by the interaction of the number of rooms, number of bedrooms, and structure type
- Rank order by average housing price and split units into quintiles accordingly
- Measure housing prices within defined quintiles in 2007 using 1970 within quintile distributions of units as weights.
- Calculate overall nominal appreciation, implied constant annual appreciation rate, and implied real constant annual appreciation rate

Table 4
Estimated Price Appreciation for Housing Units Between 1970 and 2007 by 1970 Quality Quintiles,
All U.S. Housing Units

Panel A: All Housing Units

	1970 price (thousands \$)	2007 price (thousands \$)	P_{2007}/P_{1970}	Annual nominal price appreciation ^a	Annual real price appreciation ^b
Quintile 1	11.202	144.227	12.88	0.072	0.025
Quintile 2	14.405	177.488	12.32	0.070	0.024
Quintile 3	16.811	198.273	11.79	0.069	0.023
Quintile 4	19.329	214.519	11.10	0.067	0.021
Quintile 5	26.244	308.852	11.77	0.069	0.023

Annualized Real Housing Price Appreciation in the Most and Least Regulated Markets, 1970 to 2007 by Quintile of the Housing Quality Distribution

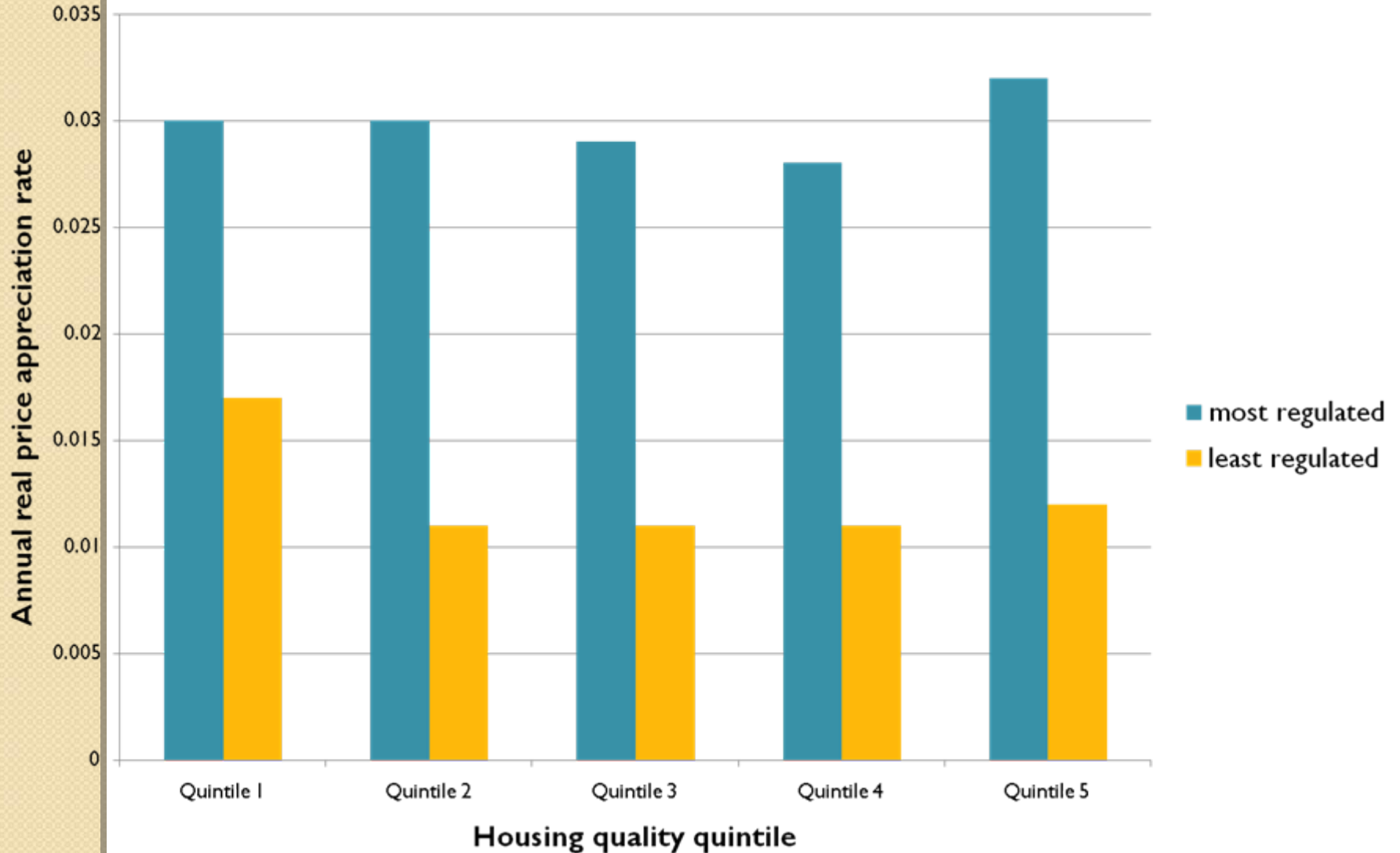
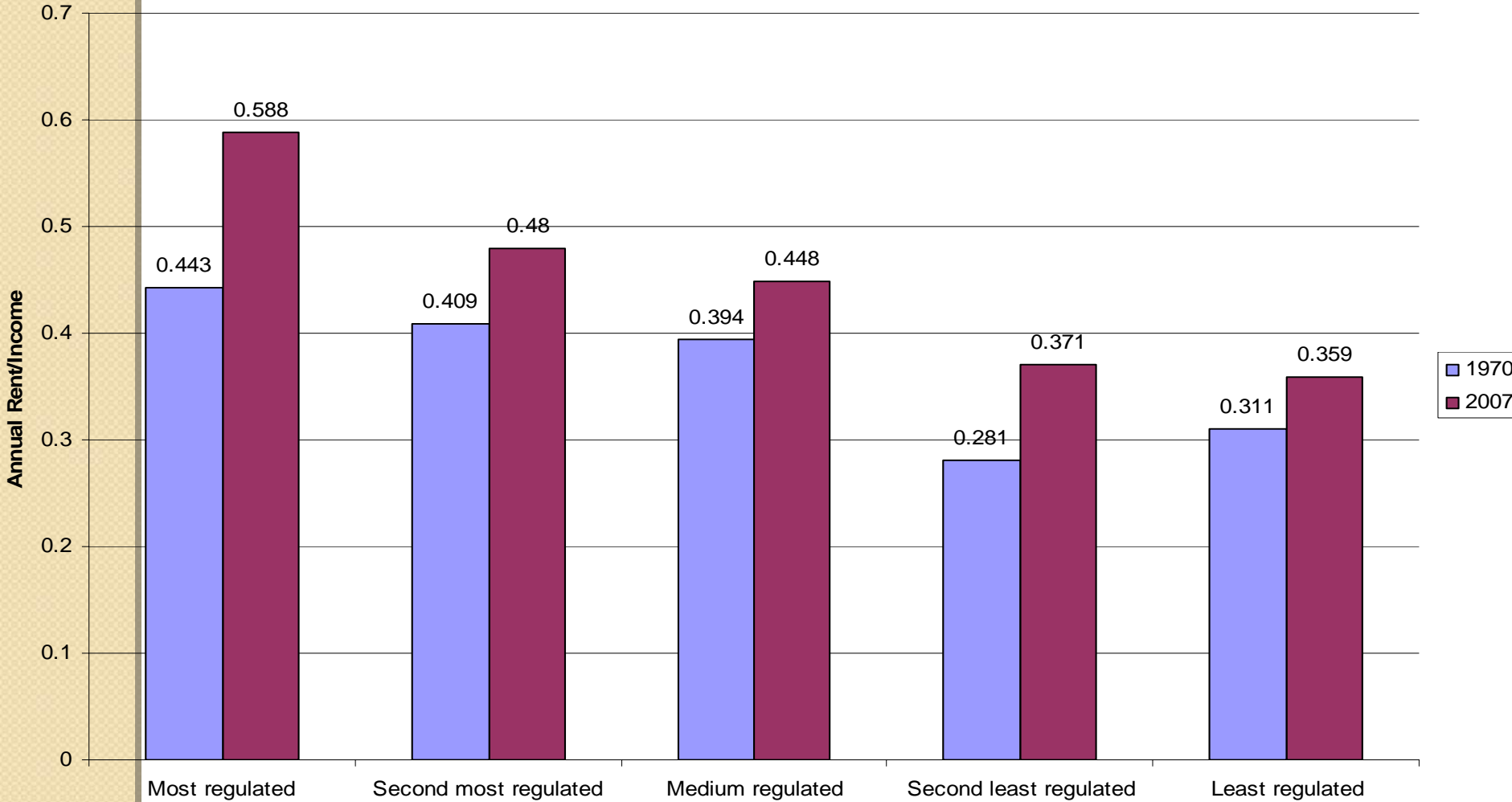


Table 6
Key Percentiles of the Distribution Rent-to-Income Ratios Among Renter Housing in 1970 and 2007
by the Stringency of Housing Regulation Practices

Panel A: Most Regulated					
	10 th	25th	50th	75th	90 th
1970	0.085	0.124	0.187	0.320	0.590
2007	0.130	0.200	0.300	0.514	0.973
Change	0.045	0.076	0.113	0.194	0.383
Panel B: Second Most Regulated					
	10 th	25 th	50th	75th	90 th
1970	0.076	0.112	0.176	0.310	0.615
2007	0.119	0.179	0.277	0.461	0.960
Change	0.043	0.067	0.101	0.151	0.345
Panel C: Medium Regulated					
	10 th	25 th	50th	75th	90 th
1970	0.074	0.108	0.168	0.286	0.546
2007	0.106	0.163	0.258	0.440	0.871
Change	0.032	0.055	0.090	0.154	0.325
Panel D: Second Least Regulated					
	10 th	25th	50th	75th	90 th
1970	0.063	0.097	0.153	0.262	0.506
2007	0.096	0.150	0.237	0.398	0.773
Change	0.033	0.053	0.084	0.136	0.267
Panel E: Least Regulated					
	10 th	25th	50th	75th	90 th
1970	0.070	0.099	0.157	0.270	0.536
2007	0.092	0.144	0.231	0.400	0.800
Change	0.022	0.045	0.074	0.130	0.264

Median Rent-to-Income Ratios for Renter Households in the Bottom Quartile of the Family Income Distribution by the Stringency of Housing Regulation Practices



Characterizing competition for housing across income groups

Define $i=(1,\dots,I)$ as an index of quality groupings, H_{qi} , as the number of households in income quartile $q=(1,2,3,4)$ in group i and H_q as the total number of households in quartile q . The dissimilarity index between quartiles j and k is given by the equation

$$D = \frac{1}{2} \sum_{i=1}^I \left| \frac{H_{ji}}{H_j} - \frac{H_{ki}}{H_k} \right|.$$

Table 7
Indices Measuring the Degree of Dissimilarity Between the Distribution of Households in Different Income Quartiles Across Housing Unit Quality Categories, by the Stringency of Housing Regulation Practices, 2007

Panel A: Dissimilarity Between The Distribution of Bottom Income Quartile Households and Households in Income Quartile ...

	Quartile 2	Quartile 3	Quartile 4
Most Regulated	0.163	0.326	0.527
Second Most Regulated	0.176	0.359	0.539
Medium Regulated	0.182	0.359	0.541
Second Least Regulated	0.190	0.376	0.557
Least Regulated	0.209	0.391	0.564

Panel B: Dissimilarity Between The Distribution of Second Income Quartile Households and Households in Income Quartile ...

	Quartile 1	Quartile 3	Quartile 4
Most Regulated	0.163	0.177	0.405
Second Most Regulated	0.176	0.194	0.412
Medium Regulated	0.182	0.187	0.418
Second Least Regulated	0.190	0.201	0.423
Least Regulated	0.209	0.199	0.414

How important is local land use regulation as a determinant of homelessness in the United States?

- Estimate OLS and IV models relating AHAR (2008) homelessness rates to state-level rent/income ratios
 - Use WRLURI index as an instrument for rent/income variable
- Perform back-of-the-envelope calculations of two counterfactual scenarios
 - Reduce regulation levels for states above the median to the median level
 - Reduce regulation levels for all states to that observed for the least regulated state.

Table 8
OLS Estimates of the Effects of Rent-to-Income Ratios on Homelessness and IV Estimates Using
Regulatory Stringency as an Instrument for Rent-to-Income Ratio, Unweighted

	OLS Estimation, Dependent Variable = Proportion Homeless			IV Estimation, Dependent Variable = Proportion Homeless, Instrumental Variable= Regulatory Stringency		
Rent-to- Income	0.025 (0.004)	0.026 (0.005)	0.025 (0.006)	0.020 (0.005)	0.019 (0.007)	0.014 (0.009)
Prop. Black	-	-0.001 (0.001)	-0.002 (0.001)	-	-0.001 (0.001)	-0.001 (0.001)
Prop. Hispanic	-	0.001 (0.001)	0.001 (0.002)	-	0.002 (0.002)	0.003 (0.002)
Prop. poor	-	0.006 (0.005)	0.009 (0.005)	-	0.003 (0.005)	0.005 (0.006)
Prison release rate	-	0.004 (0.134)	-0.056 (0.139)	-	-0.027 (0.137)	-0.073 (0.145)
Prop. under 18	-	-	-0.010 (0.012)	-	-	-0.021 (0.015)
Prop. Over 65	-	-	-0.019 (0.011)	-	-	-0.024 (0.012)
R ²	0.452	0.503	0.534	0.435	0.481	0.499
N	50	50	50	50	50	50
First stage t (p-value)	-	-	-	10.14 (0.000)	7.85 (0.000)	5.96 (0.000)

Table 9
OLS Estimates of the Effects of Rent-to-Income Ratios on Homelessness and IV Estimates Using
Regulatory Stringency as an Instrument for Rent-to-Income Ratio, Weighted by State Population

	OLS Estimation, Dependent Variable = Proportion Homeless			IV Estimation, Dependent Variable = Proportion Homeless, Instrumental Variable= Regulatory Stringency		
Rent-to- Income	0.032 (0.003)	0.037 (0.005)	0.037 (0.005)	0.027 (0.004)	0.031 (0.007)	0.025 (0.009)
Prop. Black	-	-0.002 (0.001)	-0.003 (0.001)	-	-0.002 (0.001)	-0.002 (0.001)
Prop. Hispanic	-	-0.000 (0.001)	-0.000 (0.001)	-	0.000 (0.001)	0.002 (0.002)
Prop. poor	-	0.014 (0.005)	0.017 (0.004)	-	0.011 (0.006)	0.011 (0.006)
Prison release rate	-	0.071 (0.119)	0.018 (0.116)	-	0.062 (0.121)	0.043 (0.123)
Prop. under 18	-	-	-0.016 (0.011)	-	-	-0.029 (0.016)
Prop. Over 65	-	-	-0.024 (0.008)	-	-	-0.029 (0.009)
R ²	0.652	0.750	0.795	0.635	0.743	0.772
N	50	50	50	50	50	50
First stage t (p-value)	-	-	-	9.13 (0.000)	5.81 (0.000)	4.44 (0.000)

Table 10
Simulated Effects of Reducing Regulatory Stringency to Specific Levels on the National Single-Night Homelessness Count

Panel A: Reducing Regulatory Stringency For States Above the Median Level to the Median Level

	Based on Unweighted Regression Results	Based on Weighted Regression Results
Base homeless count ^a	645,453	645,253
Simulated homeless count	607,939	561,962
Difference	37,314	83,291

Panel B: Reducing Regulatory Stringency in All States to the Level of the Least Regulated State

	Based on Unweighted Regression Results	Based on Weighted Regression Results
Base homeless count ^a	645,253	645,253
Simulated homeless count	528,834	385,382
Difference	116,419	259,872