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The effect of rent control on commute times

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Abstract

This paper adds to the empirical literature on rent control. We hypothesize that rent control affects commute times. New Jersey census tract data (from the Urban Institute/Geolytics Neighborhood Change Database) show a positive and statistically significant relationship between rent control and commute times for 1980, 1990 and 2000. For 1980 and 1990, we confirm that it is a lack of household mobility that is behind the longer commutes. For 2000, detailed rent control data allow an examination of the consequences of the specific type of vacancy decontrol legislation. The most restrictive ordinances have the strongest effect on commute times.

1. Introduction

Studies of rent control have examined its consequences on efficiency and equity.[1] In this paper we take up an aspect of the spatial effects of rent controls. We test for evidence of distortions in household location decisions as evidenced by long commute times. Using New Jersey census tract level data, we examine the impact of rent control on commute times.

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[1] For example, see Early and Olsen [6], Early and Phelps [7], Glaeser [9], Glaeser and Luttmer [10], Gyourko and Linneman [12], Linneman [15], Moon and Stotsky [16], Munch and Svarer [17], Nagy [18], and Strassmann [22]. Turner and Malpezzi [23] review the empirical evidence pertaining to the costs and benefits of rent control.

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Economic models predict that utility-maximizing households weigh the benefits of moving against the costs. Rent controls raise the cost of moving. Rent controls expand search costs or, if moving to a neighborhood without controls, the household must forego the present value of the future rent differential. In either case, mobility will be discouraged. As a result, as employment locations change, households in rent-controlled units may reject moves that would otherwise be attractive. The result will be to lengthen average commutes to work.

The private costs of extended commutes include the explicit costs (gasoline, automobile wear and tear) and the opportunity cost of time spent in commute, adding to the generally acknowledged list of efficiency costs associated with rent controls. In addition, longer commutes imply a negative externality in the form of pollution and increased congestion. As commuters in rent-controlled units lengthen their time on the road, they create congestion externalities for the community as a whole. Labor market matches will deteriorate as workers fail to move when they might otherwise benefit from a move, slowing economic activity and growth. Hardman and Ioannides [13], who model the effects of rent control on economic growth, note that little attention has been paid to the consequences for economic activity of institutional factors, including rent control, that limit mobility.

The following section outlines the circumstances under which rent control would limit mobility and extend commute times. Section 3 describes the New Jersey rent control ordinances, previous research focused on New Jersey rent controls, and explains the advantages of using the New Jersey census tract level data from the Neighborhood Change Database. In Section 4, the empirical connection between rent control and commute times is explored and reported. Section 5 reports empirical estimates of the impact of rent controls on mobility, using the same New Jersey data. Concluding remarks are in Section 6.

2. Rent control, mobility, and commute times

To the extent that rent control results in below market rents, residents will find the costs of moving to be greater in a regulated than in an unregulated market. Rent control raises the costs of moving by increasing search costs. Or, if moving to a neighborhood without rent controls, the occupant of a rent-controlled unit must give up the present value between the market rent and the controlled rent. All else constant, this will reduce residential mobility in neighborhoods with rent control.

Household mobility is best explained using traditional models of human capital investment (as in Becker [4]). In a rent-controlled context, moving is attractive if the present value of the yearly reduction in commute costs is greater than the positive rent differential that results from moving from a rent-controlled unit. Clearly, large rent differentials may rule out otherwise beneficial moves.

3. New Jersey rent control ordinances

Rent controls were adopted by municipalities across New Jersey following a 1973 State Supreme Court ruling setting the authority for such controls with local governments.

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Lett [14] identifies 97 localities in New Jersey that had enacted rent control legislation (other sources put the number slightly higher but do not offer a comprehensive list of localities). We use Lett's list to identify census tracts with rent control in 1980 and 1990. No detail is given for the type of rent control in place. Of the 1415 census tracts matched to place names in our database, 686 were subject to rent control.

According to Lett [14], the various New Jersey ordinances were "generally comparable" with respect to "scope and stringency" (p. 79). Not only were the rent control ordinances in New Jersey adopted at approximately the same time (early to mid-1970s), most were modeled after an ordinance initially adopted by Fort Lee, New Jersey, in 1972.

Lett classified the New Jersey ordinances as "intermediate regulatory mechanisms," more liberal than the stringent Massachusetts statutes at the time, yet stricter than those found in Alaska and Connecticut. The New Jersey ordinances allowed annual rent increases and a pass-through for real estate taxes and capital improvements. The New Jersey ordinances exempted new construction. State statutes governed eviction.

For 2000, we use a town-by-town report of rent control ordinances commissioned by the New Jersey Apartment Association (NJAA [20]). The 2000 report includes a detailed view of variations in ordinances across the state. For each town, it is noted whether rents are permitted to rise when tenants move out (called vacancy decontrol) and whether there are constraints on rents for new tenants. Some towns allow decontrol at turnover, but then subject the new tenants to control (referred to in the NJAA report as "vacancy decontrol/recontrol"). Other towns have what is called limited vacancy decontrol where rents are allowed to rise gradually to market levels. Still others allow permanent vacancy decontrol. The strictest ordinances permit no vacancy decontrol at all. In 2000, of the 1415 census tracts matched to place names in our database, 733 had rent control—367 allowed vacancy decontrol but re-controlled the units once they were rented, 152 had limited vacancy decontrol, 25 had permanent vacancy decontrol, and 189 allowed no vacancy decontrol at all.

Previous work examining rent control in New Jersey is in Gilderbloom and Markham [8]. Gilderbloom and Markham examined the impact of rent control in 125 New Jersey cities with greater than 10,000 residents. Sixty of these cities had rent control. Gilderbloom and Markham found no evidence of an impact of rent control on the level of rents, new construction, or the rate of rent increases and a limited negative impact on the quality of rental housing. They controlled for income, complex size, proximity to metropolitan areas, race, overcrowding, and building age (unit built prior to 1940). They concluded that moderate rent control is an ineffective tool in constraining rental rates. They suggest that vacancy decontrol provisions, annual rent increases, and rent control boards sympathetic to landlords are to blame. An effort to control for variations in the strictness of rent control ordinances did not change the results. Gilderbloom and Markhan did not examine the impact of rent control on mobility, but their findings suggest that it should have little to no effect.

Our database differs in that we use census tract level data from the Urban Institute/Geolytics Neighborhood Change Database (NCDB).[2] Gilderbloom and Markham [8]

[2] In the NCDB, census tracts for 1980 and 1990 are normalized to 2000 boundaries.

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constrained their sample of municipalities to those with populations over 10,000, citing the fact that the census does not make data on smaller municipalities easily accessible. We get around this problem by using census tract level data; rent control status is assigned on the basis of the census "place" in which the tract population most generally lies.[3] Between 1976 and 2000 we find that, of the 1415 census tracts with associated place names, ordinances were repealed in 63 and newly instituted in 110. There was no change in the remaining 1242 tracts.

One advantage of examining the effect of rent control at the census tract level is that we are able to control for characteristics of the community at a very local level. In large cities, such as Newark, home to 273,546 residents at the time of the 2000 census, averages do not necessarily represent the living conditions or characteristics of a specific neighborhood. At the tract level, that is much less of a problem. In 2000, the average population of a census tract in New Jersey was 4235.

4. Empirical evidence

Several regressions are estimated. The first examines whether rent controls affect commute times. Using Eq. (1), separate regressions are estimated for 1980, 1990 and 2000:

$$T_i = \alpha + \beta_1 R_i + \beta_2 X_i + \varepsilon_i. \tag{1}$$

In this equation, T_i is the measure of commute time, R_i is a rent control dummy, and X_i is a vector of control variables. Two measures of commute time are used. The first is the percent of the commuting population 16 years of age and older that reported commute times of 45 minutes or longer. The second is the percent of the commuting population that reported commute times of 25 minutes or longer (20 minutes for the 1980 data). The rent control dummy is set equal to one in census tracts where the associated place name is a community with a rent control ordinance and zero otherwise.[4]

For 2000, we also tested a modified version of Eq. (1), replacing the single rent control dummy with variables that indicate the type of control in place. Four dummy variables characterize the type of vacancy decontrol provisions in the community: (1) vacancy decontrol/recontrol, (2) permanent vacancy decontrol, (3) no vacancy decontrol, or (4) limited

[3] One thousand nine hundred fifty census tracts listed with FIPS (Federal Information Processing Standards) place codes in the NCDB and 3427 place codes listed with place names in the FIPS database resulted in 1415 matches of census tracts with place names. In the NCDB, place codes are assigned to a census tract to reflect the place where the largest percentage of the population lived at the time of the census (Urban Institute [24]). The FIPS database is available at http://www.itl.nist.gov/fipspubs/55new/nav-top-fr.htm. Some tracts that did not match with a place are rural. Others do not show up because, in New Jersey, the US Census does not include townships in its list of "places." Of 567 municipal governments in New Jersey, 247 are townships (NJSDC [19]). Once census tracts were matched to place names, the place names were used as the basis for indicating whether or not a census tract was subject to rent controls. Of the 97 locales with rent controls listed by Lett [14], 11 communities did not match to a place name. In the 2000 NJAA report, excluding towns with rent controls on mobile homes only, 10 towns of 106 with rent controls did not match.

[4] In the 2000 regressions, three communities with rent control ordinances that applied exclusively to mobile homes were coded as being without rent control.

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vacancy decontrol. The most constraining regulation is no vacancy decontrol, the least constraining is permanent vacancy decontrol.

The census tract data allow us to control for characteristics of the locale and of the general and rental population that might be correlated with commute times. The percent of households that rent is included as the larger the percentage of households that rent, the more likely it is that rent control ordinances in a community will influence commute times. Also, the percent of the apartment stock of various ages is included in the regressions to control for the fact that new units are generally exempt from rent control.

Following Gordon, Kumar and Richardson [11], several variables are included to control for aspects of metro spatial structure that might affect commute times.[5] Population density is included to proxy the distance from major metropolitan areas where New Jersey residents work—Philadelphia and Newark/New York. Residents who work in a major metropolitan area may experience longer commutes. Although we do not have data on land use, the census offers very detailed data on occupation, which we include in the regressions.[6] On average, some occupations may involve longer commute times. For example, a professional is more likely to commute a long distance to secure a good job match than an unskilled laborer, for whom many jobs are equivalent.

Several variables are included to control for variations in the stability of the population. Basu and Emerson [3], Arnott [1] and Nagy [18] suggest that rent control attracts tenants expecting to stay for a long time (they are more willing to invest the time and effort needed to find scarce rent controlled units). On the other hand, where rents are decontrolled upon vacancy, owners will seek short-term tenants as insurance against losses associated with rising market rents.

One way to control for variation in the propensity to move is to include measures of the age of the population. As residents age, their ties to a community generally increase. Evidence of an inverse relationship between age and mobility is reported by Clark and Heskin [5], Ault et al. [2], Nagy [18], and Munch and Svarer [17]. Eleven age categories are included in the regressions.[7]

Controls are also included for the number of bedrooms in existing rental units and the percent of rental units in structures of various sizes. Many bedrooms suggest a large family, and large families may be less likely to move.[8] With respect to structure size, Clark and Heskin [5] and Gilderbloom and Markham [8] report evidence consistent with the hypo-

[5] Gordon, Kumar and Richardson [11] examined the affect of metropolitan spatial structure on automobile and public transit commute times in 82 Standard Metropolitan Statistical Areas in the US. Their empirical tests confirmed the hypothesis that land use (residential, commercial and industrial), occupation (industrial, commercial), population density, and the percent of the population working in the largest city in the SMSA influence drive times.

[6] The nine occupation categories in the NCDB are: persons 16 years of age or older (1) employed in professional and technical occupations, (2) employed as managers and administrators, (3) employed as sales workers, (4) employed as administrative support and clerical workers, (5) employed as craft workers (skilled), (6) employed as operators (semiskilled), (7) employed as nonfarm laborers (unskilled), (8) employed as service workers, and (9) employed as farm workers or in forestry and fishing. The omitted category is the percent of persons 16 and older employed in professional and technical occupations.

[7] The omitted category is the percent of the population over 75 years of age.

[8] The omitted category is the percent of rental units with five or more bedrooms.

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thesis that owners of smaller buildings tend toward offering lower rents to avoid turnover. If so, mobility among tenants in uncontrolled units in smaller buildings should be reduced, resulting in longer commute times for residents of the census tract.[9]

Two variables are included to control for the racial and ethnic composition of the population of the census tract. The first is the percent of the population that is black. Ault et al. [2] suggest that discrimination may leave African-Americans with a limited set of housing choices and, therefore, limit their mobility. If this is the case, we would expect to see extended commute times for this subgroup of the population. We also include the percent of the population that is Spanish speaking, as households who have members who speak Spanish may experience similar discrimination or prefer to live in Spanish-speaking neighborhoods, again affecting commute times.

Other community measures include the percent of the population living in poverty and average household income. Limited housing options may constrain poor families from moving near their place of employment (spatial mismatch), lengthening commute times. Also, many poor families do not participate in the labor market. In 2001, nearly 45 percent of heads of households did not work at all (US Census Bureau, 2003).

Average household income may reflect the nature of job opportunities available to workers. Higher income workers with specific skills have greater difficulty finding a good labor market match. They may take on longer commutes to garner the higher wages associated with a good match.

Table 1 presents descriptive statistics for the dependent variables and explanatory variables used in the regressions. Regression results showing the impact of rent controls on commute times are presented in Tables 2–4.[10] In Table 2, the dependent variable is the percent of commuters with drive times of 45 minutes or more. In Table 3, the dependent variable is the percent of commuters with drive times of 25 minutes or more.[11] In every case, the coefficient on the rent control dummy is positive and significant, generally at the one percent level, providing support for the hypothesis that rent control is associated with longer commute times.

Looking at the results for 2000, if a community had rent controls, we find (Table 2) that the share of commuters with commutes 45 minutes or longer increased by 1.8 percentage points. With 2,692,745 commuters in 2000, this amounts to 48,469 additional commuters shifting into the longer commute category. In 1990 and 1980 the increases are 1.2 and 0.8 percentage points, respectively, shifting 33,019 and 19,402 commuters into the longer category.

[9] The omitted category is the percent of rental units that are not permanent structures, but are mobile homes or trailers instead.

[10] We estimate each regression using ordinary least squares. The regression p-values are based upon heteroskedastic-consistent standard errors (see White [25]). Not shown are results in which the regressions were run without the control variables. Without control variables, the coefficient of the rent control dummy is always positive and significant, as expected.

[11] The NCDB commute time categories for 1990 and 2000 include: workers 16+ years old with travel time to work less than 25 minutes or work at home, workers 16+ years old with travel time to work between 25 and 44 minutes, and workers 16+ years old with travel time to work more than 45 minutes. The denominator is: workers 16+ years old traveling to work by car, truck or van. For 1980 the cut-off is 20 minutes, not 25.

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Table 1
Variables used in regressions

Name of variable	1980		1990		2000	
	Mean	SE	Mean	SE	Mean	SE
% Commuters drive time > or = 45 minutes	0.15	0.08	0.16	0.08	0.21	0.08
% Commuters drive time > or = 25 minutes			0.40	0.11	0.46	0.11
% Commuters drive time > or = 20 minutes	0.53	0.13				
Rent control dummy 1976	0.48	0.50	0.48	0.50		
Rent control dummy 2000					0.52	0.50
Rent control dummy = 1 if vacancy decontrol/recontrol					0.26	0.44
Rent control dummy = 1 if permanent vacancy decontrol					0.02	0.13
Rent control dummy = 1 if no vacancy decontrol					0.13	0.34
Rent control dummy = 1 if limited vacancy decontrol					0.11	0.31
% Renters moved in prior to 1975	0.33	0.13				
% Renters moved in prior to 1980			0.19	0.11		
% Renters	0.39	0.25	0.38	0.24	0.39	0.25
% Below poverty	0.11	0.12	0.10	0.10	0.11	0.11
Population density (population per square mile)	10,127	12,264	9,817	11,795	10,249	12,481
Average household income ($)	22,186	9,192	47,855	23,576	66,839	34,598
% Population black	0.15	0.26	0.17	0.27	0.19	0.27
% Pop. Spanish speaking	0.07	0.13	0.10	0.15	0.14	0.17
% Renter units built 1950–1969	0.33	0.20	0.33	0.18	0.34	0.16
% Renter units built 1970s	0.14	0.17	0.14	0.14	0.14	0.13
% Renter units built 1980s			0.12	0.16	0.09	0.12
% Renter units built 1990–3/00					0.06	0.11
% Emp. as exec./mgr./admin.	0.11	0.07	0.13	0.07	0.13	0.08
% Employed as sales workers	0.09	0.04	0.11	0.04	0.11	0.04
% Emp. admin. support/clerical	0.20	0.05	0.19	0.05	0.17	0.05
% Emp. precision prod./craft	0.12	0.04	0.10	0.04	0.15	0.08
% Employed as operators	0.15	0.09	0.11	0.07	0.04	0.04
% Emp. as nonfarm laborers	0.05	0.03	0.04	0.03	0.03	0.03
% Employed as service workers	0.13	0.06	0.13	0.07	0.16	0.08
% Emp. farm/forestry/fishing	0.01	0.01	0.01	0.01	0.00	0.01
% Rental units—0 bedrooms	0.03	0.05	0.03	0.05	0.05	0.06
% Rental units—1 bedroom	0.36	0.17	0.33	0.17	0.34	0.17
% Rental units—2 bedrooms	0.36	0.13	0.37	0.14	0.35	0.14
% Rental units—3 bedrooms	0.18	0.12	0.19	0.14	0.20	0.14
% Rental units—4 bedrooms	0.05	0.08	0.05	0.08	0.05	0.08
% Single rental units detached	0.20	0.25	0.20	0.25	0.21	0.25
% Single rental units attached	0.05	0.10	0.07	0.12	0.08	0.12
% Rental units in 2-unit bldg.	0.22	0.17	0.19	0.16	0.19	0.15
% Rental units in 3/4-unit bldg.	0.15	0.13	0.15	0.13	0.15	0.12
% Rental units in 5+ unit bldg.	0.38	0.26	0.36	0.26	0.37	0.26
% Pop. under 4 years of age	0.06	0.02	0.07	0.02	0.07	0.02
% Pop. 5 to 9 years of age	0.07	0.02	0.06	0.02	0.07	0.02
% Pop. 10 to 14 years of age	0.08	0.03	0.06	0.02	0.07	0.02
% Pop. 15 to 19 years of age	0.09	0.03	0.06	0.02	0.06	0.02
% Pop. 20 to 24 years of age	0.09	0.03	0.08	0.04	0.06	0.04
% Pop. 25 to 29 years of age	0.08	0.03	0.09	0.03	0.07	0.04
% Pop. 30 to 34 years of age	0.07	0.02	0.09	0.02	0.08	0.03
% Pop. 35 to 44 years of age	0.11	0.03	0.15	0.03	0.17	0.03
% Pop. 45 to 54 years of age	0.11	0.03	0.11	0.03	0.13	0.03
% Pop. 55 to 64 years of age	0.11	0.04	0.09	0.03	0.09	0.02
% Pop. 65 to 74 years of age	0.07	0.05	0.08	0.05	0.07	0.04

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Table 2
Regression results—effect of rent control on commute time

Dependent variable: percent of commuters with drive time 45 minutes or more	1980		1990		2000	
	Coefficient	*p*-value	Coefficient	*p*-value	Coefficient	*p*-value
Constant	0.061	0.576	0.089	0.374	−0.134	0.251
Rent control dummy 1976	8.033E−03	0.046**	0.012	0.002***		
Rent control dummy 2000					0.018	0.000***
% Renters	−0.039	0.069*	−0.035	0.024**	0.029	0.203
% Below poverty	0.116	0.019**	0.092	0.002***	0.017	0.709
Population density	1.592E−06	0.000***	2.193E−06	0.000***	1.726E−06	0.000***
Average household income	4.097E−06	0.000***	4.914E−07	0.003***	3.345E−07	0.003***
% Population black	9.102E−03	0.489	0.036	0.001***	0.021	0.069*
% Pop. Spanish speaking	−0.068	0.006***	−0.065	0.002***	−0.095	0.000***
% Renter units built 1950–1969	0.019	0.112	−1.367E−03	0.902	−0.041	0.005***
% Renter units built 1970s	0.049	0.001***	0.044	0.001***	0.029	0.098*
% Renter units built 1980s			0.077	0.000***	0.078	0.000***
% Renter units built 1990–3/00					0.018	0.417
% Emp. as exec./mgr./admin.	−0.126	0.047**	0.281	0.000***	0.248	0.000***
% Employed as sales workers	−0.171	0.031**	0.097	0.130	0.044	0.572
% Emp. admin. support/clerical	2.380E−03	0.967	0.092	0.074*	0.096	0.102*
% Emp. precision prod./craft	−0.096	0.114	0.201	0.011***	0.102	0.028**
% Employed as operators	−0.079	0.098*	−0.019	0.734	−0.145	0.154
% Emp. as nonfarm laborers	0.171	0.091*	−0.013	0.871	−0.122	0.206
% Employed as service workers	−0.203	0.000***	−0.219	0.000***	−0.191	0.000***
% Emp. farm/forestry/fishing	−0.361	0.024**	−0.033	0.856	−0.201	0.566
% Rental units—0 bedrooms	−0.071	0.253	0.095	0.128	0.118	0.099*
% Rental units—1 bedroom	−0.033	0.517	−0.025	0.620	−6.502E−04	0.991
% Rental units—2 bedrooms	−0.036	0.434	0.046	0.364	0.091	0.110
% Rental units—3 bedrooms	−0.032	0.542	1.110E−03	0.982	0.023	0.685
% Rental units—4 bedrooms	−0.125	0.029**	−0.104	0.092*	0.046	0.409
% Single rental units detached	0.098	0.022**	0.041	0.324	0.061	0.398
% Single rental units attached	−0.025	0.595	−0.058	0.192	−0.013	0.854
% Rental units in 2-unit bldg.	−8.59E−03	0.836	−0.077	0.062*	−0.051	0.464
% Rental units in 3/4-unit bldg.	0.051	0.248	−0.016	0.704	0.039	0.590
% Rental units in 5+ unit bldg.	0.042	0.319	−7.595E−04	0.985	0.031	0.669
% Pop. under 4 years of age	−0.146	0.454	0.027	0.847	0.305	0.096*
% Pop. 5 to 9 years of age	0.180	0.372	0.031	0.837	0.273	0.107
% Pop. 10 to 14 years of age	0.163	0.338	0.056	0.696	0.258	0.089*
% Pop. 15 to 19 years of age	−0.029	0.841	−0.090	0.446	0.021	0.882
% Pop. 20 to 24 years of age	−0.188	0.162	−0.265	0.011***	0.050	0.663
% Pop. 25 to 29 years of age	0.166	0.262	−5.455E−03	0.955	0.170	0.269
% Pop. 30 to 34 years of age	0.475	0.006***	0.173	0.152	0.232	0.124
% Pop. 35 to 44 years of age	0.331	0.073*	0.085	0.404	0.309	0.006***
% Pop. 45 to 54 years of age	−0.270	0.096*	3.282E−03	0.974	0.161	0.185
% Pop. 55 to 64 years of age	−0.407	0.003***	−0.363	0.002***	0.056	0.702
% Pop. 65 to 74 years of age	0.481	0.001***	−0.096	0.499	0.397	0.014

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Table 2 (*continued*)

Dependent variable: percent of commuters with drive time 45 minutes or more	1980		1990		2000	
	Coefficient	*p*-value	Coefficient	*p*-value	Coefficient	*p*-value
R bar squared	0.35		0.39		0.34	
Standard error of estimate	0.07		0.06		0.07	
Observations	1400		1408		1407	

Notes. Omitted variables:
% apartments built prior to 1949;
% employed in professional and technical occupations;
% renter-occupied housing units with 5 or more bedrooms;
% renter-occupied housing units consisting of a mobile home or trailer;
% population 75 years of age and older.

* Indicate significance at the 10 percent level.
** Idem., 5 percent.
*** Idem., 1 percent.

For 2000, if a community has rent controls, we find (Table 3) that the share of commuters with commutes greater than or equal to 25 minutes increased by 2.5 percentage points. This amounts to 67,318 commuters shifting out of the shortest commute category. In 1990 and 1980 (for 1980 the shortest commutes are defined as less than 20 minutes), the increases are 1.5 and 2.3 percentage points, respectively, shifting 41,261 and 55,782 commuters out of the shortest commute category.

Although we can only observe changes in commute times that shifted commuters from one category to another, it would be perfectly reasonable to assume from these results that the cross-category changes are just the tip of the iceberg and that a small percentage of commuters across the board had some positive increase in commute times.

Table 4 shows the year 2000 results where the single rent control variable is replaced by the four variables that indicate the type of vacancy decontrol provisions in place. The coefficient on the dummy variables for no vacancy decontrol and for vacancy decontrol followed by recontrol are positive and significant at the one percent level. The coefficient of the limited vacancy decontrol dummy variable is positive but only significant (at the five percent level) for commute times over 45 minutes. The coefficient on the permanent vacancy decontrol dummy is positive but only significant (at the one percent level) in the regression explaining the percent of the population with commute times of 25 minutes or more. Of all the types of vacancy decontrol, no vacancy decontrol and vacancy decontrol followed by recontrol are the most constraining. It is not surprising then that these policies are consistently related to a positive increase in commute times.

As can be seen in Tables 2–4, the control variables generally conform to expectations. Poorer communities have longer commute times. Population density is positively (and always significantly, at the one percent level) associated with longer commute times. The results confirm that residents of wealthier census tracts have significantly longer commute times. The coefficients of the occupation variables are often significant. One category is consistently associated with shorter drive times, that of service workers. Perhaps the homogeneity of this type of employment allows better matches closer to home.

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Table 3
Regression results—effect of rent control on commute time

Dependent variable: percent of commuters with drive time 25 minutes or more (20 for 1980)	1980		1990		2000	
	Coefficient	*p*-value	Coefficient	*p*-value	Coefficient	*p*-value
Constant	0.077	0.549	0.083	0.582	−0.270	0.103*
Rent control dummy 1976	0.023	0.000***	0.015	0.003***		
Rent control dummy 2000					0.025	0.000***
% Renters	−0.115	0.000***	−0.105	0.000***	0.037	0.415
% Below poverty	0.204	0.006***	0.218	0.000***	0.075	0.424
Population density	0.000	0.000***	0.000	0.000***	0.000	0.000***
Average household income	0.000	0.000***	0.000	0.007***	0.000	0.003***
% Population black	0.105	0.000***	0.091	0.000***	0.061	0.002***
% Pop. Spanish speaking	−0.153	0.000***	−0.064	0.058*	−0.114	0.001***
% Renter units built 1950–1969	0.013	0.453	−0.031	0.057*	−0.058	0.019**
% Renter units built 1970s	0.036	0.070	0.050	0.013**	0.032	0.219
% Renter units built 1980s			0.099	0.000***	0.088	0.003***
% Renter units built 1990–3/00					0.048	0.088*
% Emp. as exec./mgr./admin.	−0.062	0.485	0.312	0.004***	0.244	0.019**
% Employed as sales workers	−0.020	0.870	0.095	0.344	−0.055	0.664
% Emp. admin. support/clerical	0.233	0.003***	0.267	0.000***	0.278	0.003***
% Emp. precision prod./craft	0.115	0.227	0.251	0.012***	0.211	0.006***
% Employed as operators	0.075	0.283	0.033	0.697	−0.269	0.308
% Emp. as nonfarm laborers	0.202	0.141	0.069	0.586	−0.270	0.203
% Employed as service workers	−0.256	0.002***	−0.434	0.000***	−0.259	0.026**
% Emp. farm/forestry/fishing	−0.694	0.005***	−0.474	0.122	−0.666	0.250
% Rental units—0 bedrooms	−0.093	0.280	0.203	0.023**	0.233	0.014***
% Rental units—1 bedroom	−0.032	0.609	0.080	0.268	0.098	0.187
% Rental units—2 bedrooms	−0.047	0.421	0.126	0.068*	0.218	0.002***
% Rental units—3 bedrooms	−0.013	0.843	0.068	0.322	0.120	0.108
% Rental units—4 bedrooms	−0.043	0.547	0.004	0.961	0.161	0.021**
% Single rental units detached	0.061	0.254	0.079	0.229	0.254	0.006***
% Single rental units attached	−0.071	0.245	−0.072	0.305	0.119	0.196
% Rental units in 2-unit bldg.	−0.041	0.445	−0.061	0.344	0.141	0.145
% Rental units in 3/4-unit bldg.	0.138	0.017**	0.043	0.517	0.214	0.023**
% Rental units in 5+ unit bldg.	0.073	0.189	0.033	0.596	0.207	0.025**
% Pop. under 4 years of age	0.073	0.798	−0.061	0.792	0.120	0.650
% Pop. 5 to 9 years of age	0.103	0.721	0.120	0.602	0.268	0.374
% Pop. 10 to 14 years of age	0.310	0.241	0.074	0.729	0.384	0.089*
% Pop. 15 to 19 years of age	0.150	0.455	−0.003	0.987	−0.129	0.586
% Pop. 20 to 24 years of age	−0.456	0.019**	−0.439	0.005***	0.036	0.838
% Pop. 25 to 29 years of age	0.679	0.001***	0.376	0.007***	0.304	0.183
% Pop. 30 to 34 years of age	0.694	0.004***	0.291	0.107	0.482	0.042**
% Pop. 35 to 44 years of age	1.106	0.000***	0.286	0.051**	0.420	0.083*
% Pop. 45 to 54 years of age	0.039	0.844	0.160	0.281	0.135	0.476
% Pop. 55 to 64 years of age	−0.096	0.560	−0.388	0.015**	0.074	0.746
% Pop. 65 to 74 years of age	0.768	0.000***	−0.036	0.868	0.459	0.065*

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Table 3 (*continued*)

Dependent variable: percent of commuters with drive time 25 minutes or more (20 for 1980)	1980		1990		2000	
	Coefficient	*p*-value	Coefficient	*p*-value	Coefficient	*p*-value
R bar squared	0.37		0.41		0.33	
Standard error of estimate	0.10		0.09		0.09	
Observations	1400		1408		1407	

Notes. Omitted variables:
% renter units built prior to 1949;
% employed in professional and technical occupations;
% rental units—5 or more bedrooms;
% rental units mobile home or trailer;
% population 75 years of age and older.

* Indicate significance at the 10 percent level.
** Idem., 5 percent.
*** Idem., 1 percent.

The percent of the population that is black has a significant positive effect on drive times, consistent with the hypothesis that housing discrimination extends drive times for this group. Alternatively, it might reflect preferences among blacks to live in segregated neighborhoods. The percent of the population that is Spanish-speaking is negatively related to drive times. This may reflect the fact that firms in which Spanish is spoken locate near predominantly Hispanic neighborhoods.

The primary finding with respect to the age variables is, as expected, that there is consistent evidence of longer commutes among the least mobile age group (35–44 years of age).[12] There does not appear to be a consistent relationship between the number of bedrooms in renter-occupied housing units and commute times. The same is true for the number of units in renter-occupied structures.

5. Mobility

The hypothesis that rent control increases commute times is based on the idea that rent control limits household mobility. Controlling for tenant characteristics, Gyourko and Linneman [12], Linneman [15], Munch and Svarer [17] and Rapaport [21] all found tenant mobility to be lower where strict rent control was in place.

We investigate this relationship in two regressions shown in Table 5. For 1980 and 1990, the NCDB indicates when a household moved into a rental unit. For 1980, we use the percent of renter households that moved in prior to 1975. This measure is inversely related to mobility. High magnitudes indicate that the population in a neighborhood is relatively immobile. For 1990 we use the share of renters who moved in prior to 1980.[13]

[12] As a reminder, the omitted category is the percent of the population over 75 years of age.

[13] We picked these measures based on the available data. The NCDB categories for 1980 include: renter-occupied housing units where the head of household moved in prior to 1950; renter-occupied housing units where

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Table 4
Regression results—effect of various categories of rent control on commute time, 2000

Dependent variable:	% Commuters with drive time 25 minutes or more		% Commuters with drive time 45 minutes or more	
	Coefficient	*p*-value	Coefficient	*p*-value
Constant	−0.267	0.106	−0.132	0.255
RC dummy = 1 if vacancy decontrol/recontrol	0.023	0.001***	0.016	0.001 ***
RC dummy = 1 if permanent vacancy decontrol	0.046	0.000***	5.605E−03	0.531
RC dummy = 1 if no vacancy decontrol	0.059	0.000***	0.052	0.000 ***
RC dummy = 1 if limited vacancy decontrol	0.016	0.113	0.016	0.016 **
% Renters	0.029	0.516	0.023	0.319
% Below poverty	0.030	0.751	−0.029	0.525
Population density	2.874E−06	0.000***	1.476E−06	0.000 ***
Average household income	5.830E−07	0.003***	3.343E−07	0.003 ***
% Population black	0.065	0.002***	0.026	0.035 **
% Pop. Spanish speaking	−0.104	0.005***	−0.084	0.000 ***
% Renter units built 1950–1969	−0.054	0.024**	−0.038	0.010 ***
% Renter units built 1970s	0.032	0.225	0.030	0.100 *
% Renter units built 1980s	0.089	0.002***	0.078	0.000 ***
% Renter units built 1990–3/00	0.039	0.170	0.007	0.736
% Emp. as exec./mgr./admin.	0.239	0.026**	0.235	0.000 ***
% Employed as sales workers	−0.035	0.785	0.064	0.412
% Emp. admin. support/clerical	0.256	0.006***	0.069	0.234
% Emp. precision prod./craft	0.215	0.006***	0.108	0.017 **
% Employed as operators	−0.260	0.308	−0.145	0.129
% Emp. as nonfarm laborers	−0.240	0.248	−0.104	0.269
% Employed as service workers	−0.244	0.046**	−0.188	0.000 ***
% Emp. farm/forestry/fishing	−0.608	0.261	−0.140	0.654
% Rental units—0 bedrooms	0.249	0.009***	0.130	0.071 *
% Rental units—1 bedroom	0.109	0.153	0.011	0.846
% Rental units—2 bedrooms	0.222	0.002***	0.097	0.091 *
% Rental units—3 bedrooms	0.119	0.116	0.023	0.691
% Rental units—4 bedrooms	0.157	0.028**	0.045	0.424
% Single rental units detached	0.256	0.005***	0.065	0.359
% Single rental units attached	0.130	0.156	−0.003	0.970
% Rental units in 2-unit bldg.	0.148	0.123	−0.045	0.514
% Rental units in 3/4-unit bldg.	0.200	0.031**	0.029	0.689
% Rental units in 5+ unit bldg.	0.207	0.024**	0.033	0.645
% Pop. under 4 years of age	0.107	0.689	0.313	0.087 *
% Pop. 5 to 9 years of age	0.259	0.392	0.269	0.106
% Pop. 10 to 14 years of age	0.388	0.081*	0.249	0.096 *
% Pop. 15 to 19 years of age	−0.179	0.458	−0.018	0.899
% Pop. 20 to 24 years of age	0.072	0.687	0.082	0.479
% Pop. 25 to 29 years of age	0.300	0.190	0.155	0.310
% Pop. 30 to 34 years of age	0.472	0.048**	0.219	0.143
% Pop. 35 to 44 years of age	0.407	0.087*	0.313	0.005 ***
% Pop. 45 to 54 years of age	0.153	0.412	0.174	0.145
% Pop. 55 to 64 years of age	0.024	0.916	0.007	0.962
% Pop. 65 to 74 years of age	0.459	0.064*	0.404	0.011*

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Table 4 (*continued*)

Dependent variable:	% Commuters with drive time 25 minutes or more		% Commuters with drive time 45 minutes or more	
	Coefficient	*p*-value	Coefficient	*p*-value
R bar squared	0.34		0.35	
Standard error of estimate	0.09		0.07	
Observations	1407		1407	

Notes. Omitted variables:
% renter units built prior to 1949;
% employed in professional and technical occupations;
% rental units—5 or more bedrooms;
% rental units mobile home or trailer;
% population 75 years of age and older.

* Indicate significance at the 10 percent level.
** Idem., 5 percent.
*** Idem., 1 percent.

These measures are regressed on the same rent control and control variables included in Eq. (1). We expect rent control to be positively associated with the percent of households that have stayed put.

The regression results focusing on mobility are consistent with previous findings. As noted above, they are reported in Table 5. For both 1990 and 1980, the rent control dummy is positive and significant at the one percent level. In 1990, communities with rent controls experienced a 4.7 percentage point increase in the share of renters who stayed put since 1980 compared to their non-controlled neighbors. In 1980, communities with rent controls experienced a 3.7 percentage point increase in the share of renters who stayed put since 1975 compared to their non-controlled neighbors. These results confirm that it is the relative immobility of the population that underlies the observed direct relationship between rent control and commute times reported above.

6. Conclusion

This paper examines the impact of rent control in New Jersey on commute times. Previous studies have examined the consequences of rent control for equity and efficiency. We examine an additional possible distortion to efficiency, the spatial dimension of the consequences of rent control. Extended commute times indicate distortions in household location decisions that might result from rent control.

the head of household moved in between 1950 and 1959; the same for 1960 to 1969, 1970 to 1974, 1975 to 1978, and 1979 to March 1980. Given that rent controls were put in place in the early to mid-1970s, to examine the effect of rent control, we calculated the percent of renter-occupied housing units where the head of household had moved in prior to 1975. For 1990, the NCDB categories are similar, however there is no break in the data in the mid-1970s. For this reason we summed the percent of renter-occupied housing units where the head of household moved in prior to 1980. Similar data for 2000 is not in the NCDB.

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Table 5
Regression results—effect of rent control on mobility

Dependent variable:	1880: % Renters moved in prior to 1975		1990: % Renters moved in prior to 1980	
	Coefficient	*p*-value	Coefficient	*p*-value
Constant	0.558	0.001***	0.348	0.066*
Rent control dummy 1976	0.037	0.000 ***	0.047	0.000 ***
% Renters	0.147	0.000 ***	0.049	0.135
% Below poverty	−0.072	0.271	0.208	0.001 ***
Population density	−2.920E−07	0.332	4.470E−07	0.161
Average household income	−9.010E−07	0.278	−4.490E−08	0.889
% Population black	0.012	0.501	2.380E−04	0.989
% Pop. Spanish speaking	−0.120	0.000 ***	−0.101	0.001 ***
% Renter units built 1950–1969	−0.045	0.022 **	−0.071	0.002 ***
% Renter units built 1970s	−0.298	0.000 ***	−0.045	0.092 *
% Renter units built 1980s			−0.232	0.000 ***
% Emp. as exec./mgr./admin.	0.059	0.593	−0.083	0.594
% Employed as sales workers	−0.253	0.046 **	0.150	0.263
% Emp. admin. support/clerical	0.082	0.331	0.283	0.002 ***
% Emp. precision prod./craft	−0.094	0.350	−0.089	0.338
% Employed as operators	0.005	0.947	0.055	0.479
% Emp. as nonfarm laborers	0.065	0.612	0.114	0.409
% Employed as service workers	−0.081	0.309	−0.094	0.196
% Emp. farm/forestry/fishing	−0.145	0.571	0.769	0.063 *
% Rental units—0 bedrooms	0.035	0.779	−0.245	0.055 *
% Rental units—1 bedroom	0.077	0.516	−0.030	0.799
% Rental units—2 bedrooms	0.183	0.111	−0.027	0.812
% Rental units—3 bedrooms	0.132	0.274	0.107	0.365
% Rental units—4 bedrooms	0.262	0.069 *	0.015	0.917
% Single rental units detached	0.036	0.742	−0.238	0.001 ***
% Single rental units attached	0.141	0.221	−0.189	0.014 ***
% Rental units in 2-unit bldg.	0.070	0.537	−0.206	0.003 ***
% Rental units in 3/4-unit bldg.	0.059	0.601	−0.121	0.077 *
% Rental units in 5+ unit bldg.	0.127	0.261	−0.078	0.262
% Pop. under 4 years of age	−1.210	0.000 ***	−0.409	0.084 *
% Pop. 5 to 9 years of age	0.234	0.424	−0.319	0.123
% Pop. 10 to 14 years of age	−0.506	0.038 **	−0.544	0.020 **
% Pop. 15 to 19 years of age	−0.138	0.565	0.216	0.322
% Pop. 20 to 24 years of age	−1.048	0.000 ***	−0.417	0.015 **
% Pop. 25 to 29 years of age	−1.075	0.000 ***	−0.253	0.163
% Pop. 30 to 34 years of age	−0.488	0.038 **	−0.172	0.339
% Pop. 35 to 44 years of age	−0.611	0.014 ***	0.027	0.878
% Pop. 45 to 54 years of age	0.185	0.429	0.428	0.019 **
% Pop. 55 to 64 years of age	−0.138	0.551	0.231	0.214
% Pop. 65 to 74 years of age	−0.293	0.155	0.066	0.772

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Table 5 (*continued*)

Dependent variable:	1980: % Renters moved in prior to 1975		1990: % Renters moved in prior to 1980	
	Coefficient	*p*-value	Coefficient	*p*-value
R bar squared	0.42		0.38	
Standard error of estimate	0.10		0.09	
Observations	1400		1408	

Notes. Omitted variables:
% renter units built prior to 1949;
% employed in professional and technical occupations;
% rental units—5 or more bedrooms;
% rental units mobile home or trailer;
% population 75 years of age and older.

* Indicate significance at the 10 percent level.
** Idem., 5 percent.
*** Idem., 1 percent.

Using New Jersey census tract data (from the Urban Institute/Geolytics Neighborhood Change Database), we are able to show a positive and statistically significant relationship between rent control and the percent of the working population that has a long commute for 1980, 1990 and 2000. We are unable to assess the actual cost associated with extended commutes, as our data only allow an assessment of changes across broad categories of commute times. Data on individual commuters and their rent control status would permit an estimation of the value of time lost due to the distortions caused by rent control.

For 2000 we have detailed rent control data that allow us to examine the consequences of the specific type of vacancy decontrol legislation in place. The result is predictable. The most constraining types of controls are systematically empirically associated with longer commute times.

When we examine tenant mobility, we find that rent control reduces mobility. We conclude that the relative immobility of the population underlies the observed direct relationship between rent control and commute times reported above.

The findings in this paper contribute to the accumulated evidence that rent control distorts housing markets in ways that reduce the efficient allocation of resources. Based on our findings, we can conclude that communities with rent control are likely to bear additional costs in the form of lost time in commute, gasoline, automobile wear and tear, highway maintenance and are likely to experience pollution and congestion externalities to a greater degree than otherwise.

In addition to the inefficient use of time and resources associated with extended commutes, it is not too much of a leap to postulate that a related consequence of rent control must be a decline in the quality of job matches for residents. As we find, the rent control differential is enough to keep some households from moving closer to their place of employment. For others it must limit the area in which they search and, therefore, the quality of eventual job matches. On the margin, some renters in controlled units will fail to search for or accept job matches that would otherwise improve labor market efficiency.

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