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Do Inclusionary Housing Policies Promote Housing Affordability? Evidence from the *Palmer* Decision in California

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Abstract

Many cities have responded to rising affordability challenges with inclusionary housing policies, where a municipality requires or incentivizes a developer building a new development to contribute affordable housing units or pay a fee. While the aim of these policies is to promote housing affordability, some critics have raised concerns about their potential unintended market consequences. Specifically, to the extent that inclusionary housing policies create opportunity costs for developers and function like a tax on housing supply, they may stifle housing production and increase the price of market-rate units, reducing overall affordability. However, inclusionary policies may also increase the supply of affordable housing, which would place downward pressure on prices. This paper examines these relationships using the 2009 ruling by California's Second District of Appeal, *Palmer/Sixth Street Properties LP v. City of Los Angeles*, which substantially weakened inclusionary housing policies in the rental market. This analysis fails to find evidence that weakening an inclusionary policy is associated with a decrease in the rental price of high-cost housing units. Meanwhile, these results also suggest that inclusionary housing policies pre-*Palmer*, in general, did promote housing affordability in the low-cost market.

Keywords: community development, housing, land use, local government, planning, public policy, urban development, value capture, zoning, inclusionary housing

About the Author

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Introduction

The combination of falling wages for middle income Americans and rising home prices have raised concerns about housing affordability. Rising rental prices are of particular concern for low-income and minority Americans, about half of whom are renters (Joint Center for Housing Studies of Harvard University 2013b).

In 1960, the median renter spent about 18 percent of her income on housing. Today, she spends about 30 percent. For renters in the bottom fifth of the income distribution, the share of income spent on rent has increased from 47 percent in 1960 to 63 percent today. While real incomes have declined relative to rental prices nationwide, federal housing assistance has remained steady or, by some measures, declined (Pelletiere et al. 2008, Turner and Kingsley 2008).

These conditions have prompted many localities to take action. While there are a range of policy interventions that cities can pursue to fulfill this gap, many have turned to inclusionary housing policies to respond to the affordability needs of their residents. Under these policies, a municipality requires or incentivizes a developer building a new development provide affordable units or pay a fee used for affordable housing. As of July 2014, nearly 500 jurisdictions had in the United States had at least one inclusionary housing policy (Hickey, Sturtevant, and Thaden 2014).

The aim of inclusionary housing policies is to promote housing affordability, particularly among low- and moderate-income residents. However, some researchers and policymakers have raised concerns about their potential unintended market consequences, which may erode their ability to meet this objective. For example, to the extent that inclusionary housing policies create opportunity costs for developers and function like a tax on housing supply, they may stifle housing production and increase the price of market-rate units, reducing overall affordability in a housing market.

Much of the past research in this area has relied on a city's decision to implement an inclusionary housing policy to identify these associated market consequences. However, to the extent that municipalities implement inclusionary housing policies when prices are rising, this identification strategy may produce bias in the estimate of this effect.

Meanwhile, though standard economic theory may suggest that inclusionary policies result in price increases among new market-rate development, they should have the opposite effect in the low-cost market. Specifically, inclusionary policies' requirements result in an increase in the supply of low-cost housing that would not have occurred in the absence of the policy. As a result, inclusionary housing policies may reduce prices in the low cost market and promote housing affordability.

Departing from traditional models in this area, this paper uses an alternative strategy to examine whether inclusionary housing policies promote or impede housing affordability. Specifically, it examines the market effects of a 2009 ruling by California's Second District of Appeal, *Palmer/Sixth Street Properties LP v. City of Los Angeles*, which substantially weakened inclusionary housing policies in the rental market. Unlike other studies that have relied on the voluntary adoption of inclusionary housing policies by cities, this study takes advantage of the statewide ruling as a plausible source of exogenous variation to identify the consequences of changing an inclusionary policy.

This analysis fails to find evidence that weakening an inclusionary policy is associated with a decrease in the rental price of high-cost housing units. Meanwhile, these results also suggest that inclusionary housing policies, in general, promote housing affordability in the low-cost market.

Review of the Literature

Basic economic theory predicts that inclusionary housing polices would function like a "tax" on market-rate development. This "tax" arises from the opportunity cost that the developer faces for including below-market rate or affordable units within an otherwise market rate development. Specifically, the opportunity cost is the difference between the market price the developer would have earned absent the policy and the lower price he actually receives from the affordable unit.

Under traditional economic theory, a tax causes a shift in supply which results in an increase in price and a decrease in quantity demanded. If an inclusionary housing policy operates like a tax, and consumers are not perfectly mobile, the developer would be able to pass along some its costs to consumers in the form of higher rental prices on new market-rate units and reduce the production of residential properties (Clapp 1981, Ellickson 1981). This can only occur if consumers are willing to pay a premium to live in the location with the inclusionary housing policy or willing to accept price increases (Padilla 1995).

If consumers are not willing to accept price increases, developers have three other possible responses. First, if the developer does not own land at the time the policy is enacted, it could bargain with landowners for a lower land price (Calavita and Grimes 1998). Second, some developers may be able to reduce their profits (Calavita and Grimes 1998, Padilla 1995). Third, developers may shift housing production to another segment, exit the market, or reduce the number of homes they build (Been 1991, Clapp 1981, and Ellickson 1981). The third response would cause a reduction in the supply of housing in the market impacted by the inclusionary housing policy. If this is the case, overall housing prices may increase.

In general, the available literature on the price effects of inclusionary housing policies have found a positive relationship between the presence of an inclusionary policy and housing prices. In a study of California between 1988 and 2005, Bento, Lowe, Knaap, and Chakraborty (2009) find that inclusionary housing policies had a positive effect on the price of single-family houses, increasing prices by about 2 to 3 percent. Similarly, and again using evidence from California, Knaap, Bento, and Lowe (2008) find that in jurisdictions with inclusionary housing policies, housing prices increase, on average, by 2.2 percent over the entire period.

In a study of San Francisco and Boston, Schuetz et al. (2009) examine the impact of inclusionary housing policies on prices and production of market-rate housing production. In Boston, Schuetz et al. (2009) find that a 1 percent increase in the age of a program leads to a 1.4 percent increase in the prices of single family homes. In their simplest model, they find no effect of inclusionary housing policies on prices in San Francisco.

While some have estimated the relationship between inclusionary policies and the stock of affordable housing, few studies have tried to examine whether the presence of an inclusionary program has an effect on affordability in the low-cost housing market. One exception is a study of inclusionary housing policies in California by Knaap, Bento, and Lowe (2008). The authors break out their estimates of price effects by segment, finding that these policies raise prices by about 5 percent for above-median priced houses, but for below-median price households, they lower prices by about 0.8 percent.

Several studies have examined the relationship between inclusionary housing policies and housing production. A reduction in supply could occur as a result of an inclusionary housing policy either because the same developers are willing to build fewer units or because only certain types of developers are willing to build at all (Clapp 1981). Powell and Stringham (2005) add that many national firms have a choice in setting up or closing shop in any given state or city and, in the long run, the number of firms will adjust.

Several studies find no evidence of an effect of inclusionary housing policies on housing production. Schuetz et al. (2009), for example, find a minor effect of inclusionary housing on housing production in Boston and no evidence in the Bay Area. Using data from Los Angeles and Orange Counties, Mukhija et al. (2010) find no statistically significant evidence of inclusionary zoning's adverse effect on housing supply in cities with inclusionary mandates. Other studies have mixed results. In the study of Californian cities, Knaap, Bento, and Lowe (2008) find that inclusionary housing policies have no significant effect on the number of permits for either single- or multifamily housing units. However, they do find that single-family permits as a share of total permits are lower in jurisdictions with inclusionary housing policies. Bento et al. (2009) find that cities with inclusionary housing policies did not experience a significant reduction in the rate of single-family housing starts; however, they did experience a marginally significant increase in multi-family housing starts.

Powell and Stringham (2004) offer the most robust findings that associate inclusionary housing policies with negative effects on housing production. On average, they find that in cities with inclusionary housing policies permits declined 10 to 30 percent in the seven years after the policies were adopted. However, critics have called out several questionable assumptions and technical limitations of this study (see Basolo and Calavita 2004). These critics have noted that this study should be interpreted only as descriptive, not as proof of a causal relationship between inclusionary housing policies and housing market outcomes.

The extant literature suffers from a number of weaknesses. The existing literature does not adequately address the issue of reverse causality. There is no doubt that cities enact inclusionary policies in response to eroding affordability (i.e., when prices are increasing). These studies use

difference-in-difference models, controlling for year and city fixed effects, which would not account for this fact. If, for example, cities adopt inclusionary housing policies when their rates of rental price growth are higher than typical or higher than their peers that do not adopt these policies, then the coefficient would be biased upward. This paper addresses this weakness by using a statewide ruling that weakened existing inclusionary housing policies as a plausible source of exogenous variation.

The current literature also fails to address three additional questions: first, it does not address what would happen to market outcomes if a city removed its existing inclusionary housing policy. Second, most studies do not address the effects of inclusionary housing policies on mid-sized and small cities, but rather focus on large cities with hot housing markets. Third, few studies directly address the effects of inclusionary housing policies on housing affordability or on the prices of lower cost units. This analysis also aims to respond to these limitations by addressing these questions directly.

Identification Strategy

Before 2009, nearly 150 jurisdictions in California had mandatory inclusionary housing policies for either ownership and/or rental developments. In the 2009 decision by the *Second District Court of Appeals in Palmer/Sixth Street Properties LP v. City of Los Angeles* case, the court ruled that inclusionary housing requirements on rental developments without cost-offsets or city benefits violate the Costa Hawkins Rental Act of 1995. The Costa Hawkins Act (Civ. Code §1954.50 et seq.) allows developers to set initial rents on newly constructed and voluntarily vacated units in jurisdictions with rent control. Inclusionary housing policies inhibit developers' abilities to set those initial rates.

The *Palmer* ruling therefore called into question the legality of existing mandatory on-site performance requirements for rental projects in California. While the legal interpretation of the *Palmer* decision varies, in general cities interpreted the decision to mean that they could no longer maintain a policy that did not include a fee alternative. Some cities responded to this legal uncertainty by eliminating their entire inclusionary housing policy.

Others responded by replacing their inclusionary housing policies with impact fees on new rental developments. Different from traditional mandatory inclusionary housing policies, which are based upon a state's police powers to advance affordable housing goals, impact or linkage fees are legally based upon the concept of mitigating impact. Typically through a nexus study, jurisdictions can evaluate the impact of new development on the additional need for affordable housing that it creates (Jacobus 2015). In general, the requirements of these types of fees are easier to meet than traditional inclusionary housing requirements.

As a result, statewide, many jurisdictions eliminated their policies or transitioned to a weaker linkage fee program in response to the *Palmer* decision. This situation presents a unique opportunity to analyze the market effects of inclusionary housing policies. Rather than relying on a city's decision to implement an inclusionary housing policy to identify changes that result from a change in policy, this analysis uses the variation resulting from the *Palmer* decision to examine

the effects of inclusionary policies on the prices of market-rate and affordable housing. Specifically, this paper compares outcomes in the rental market after 2009 among those cities that had rental inclusionary housing policies to those that did not.

This analysis covers 120 cities in California for which data were available. The treatment period begins in 2010. While the *Palmer* decision occurred in July 2009, it was a few months before cities and developers reacted. As a result, 2010 is the first year that we might reasonably expect to see market effects from *Palmer* and is therefore the first year of treatment.

Empirical Design

This section presents the two main specifications in this paper.

Basic Model

Equation 1 below shows the general specification that is estimated for rental prices.

$$(1)\ \log(y_{ct}) = \alpha + \tau D_{ct} + \delta \mathbf{1}(t = 1) + \gamma \mathbf{1}(c = 1) + X_{ct}\beta + \varepsilon_{ct}$$

where $\log(y_{ct})$ is the natural log of the outcome variable, a variety of measures of prices in the rental market. *D* is a dummy variable that equals 1 if the city had a rental inclusionary housing policy before *Palmer* and for the treatment period (beginning in 2010), and 0 otherwise.

The model includes year and city fixed effects: *t* is a vector of dummy variables for years 2007 through 2013 and *c* is vector of dummy variables for cities. These fixed effects control for city-specific characteristics that do not vary over time (e.g., geography) and time-specific characteristics that do not vary by city (e.g., statewide economic conditions). *X* is a vector of time-variant individual city characteristics, including population size, racial composition, and rates of educational attainment. These variables control for additional attributes that vary both by time and city.

Event Study Model

Equation 2 below shows the event study specification that is estimated for rental prices.

$$(2)\ \log(y_{ct}) = \alpha + \sum_{j=t0}^{T} \tau_j [\mathbf{1}(t = j) x\ D) + \delta \mathbf{1}(t = 1) + \gamma \mathbf{1}(c = 1) + X_{ct}\beta + \varepsilon_{ct}$$

Rather than estimating a single treatment effect, this model specifies a vector of treatment effects by year, τ_j.

The event study specification has two advantages over the basic model. First, the event study model can document pre-trends in the period before *Palmer* (i.e., 2007 to 2009). Given that the parallel trends assumption is a key identifying assumption for the difference-in-differences model, if no statistically significant differences are found in the pre-treatment coefficients it will

strengthen the internal validity of the estimate. Second, the event study model shows the time path of the effect of treatment.

For both models, standard errors are clustered at the county level because housing market outcomes between cities that are geographically close to each other are likely correlated with one another.

Description of the Dependent Variables

The key dependent variable, rental price, was measured using annual median rental prices, by city and town, from the U.S. Census' one year American Community Survey (data are available from 2007 to 2013). To test whether there is a difference in this outcome for high-cost versus low-cost properties, this analysis includes an identical model with two additional outcome variables: upper quartile income and lower quartile income. These data are also available by city and year, from the U.S. Census' American Community Survey.

The Census data on upper quartile rental prices would not include the price of new market-rate development. As a result, the model was also tested using residential valuation data from RAND California Residential Construction Statistics, which reports total residential valuation of new construction permits, by month, from 2001 through 2012.

All price data was adjusted for inflation using the Consumer Price Index.

Description of the Key Independent Variables

The presence of a mandatory rental inclusionary housing policy is assessed by survey data from the California Coalition for Rural Housing (CCRH), the Non-Profit Housing Association of Northern California (NPH), the Sacramento Housing Alliance (SHA) and the San Diego Housing Federation (SDHF). Led by CCRH, these organizations conducted the survey between 2008 and 2009. These data are not time-series, but rather only give a snapshot of what existed in the beginning of 2009. It is therefore assumed that if a city had an inclusionary housing policy in this dataset then it also had that policy in 2007. It is also assumed that no city passed a rental inclusionary housing policy between the survey date (January 2009) and the *Palmer* decision (July 2009). Table 1 below shows the covariates included in all of the model specifications.

TABLE 1. Key Independent Variables

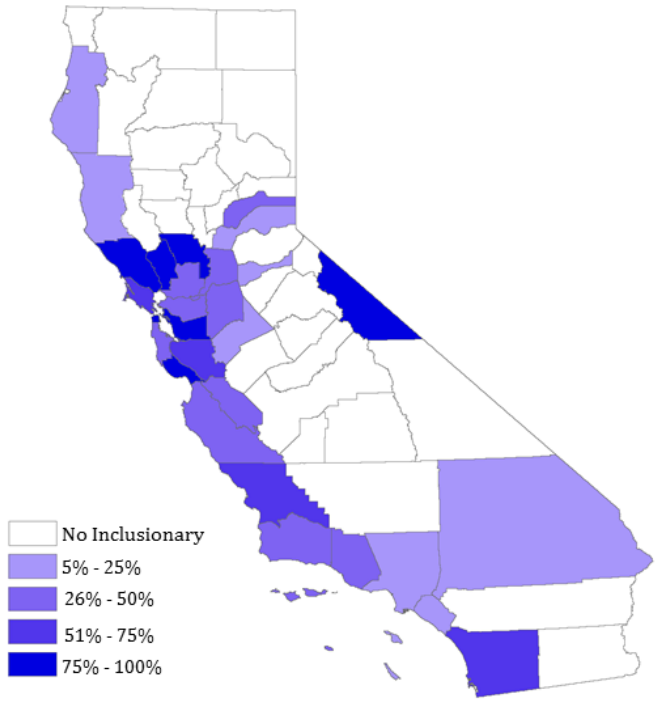
Variable	Source
Log of total population	American Community Survey, U.S. Census
Percent of 19 year-olds and over who are employed	American Community Survey, U.S. Census
Percent of population that is white	American Community Survey, U.S. Census
Percent of population that is black	American Community Survey, U.S. Census
Percent of population that is Hispanic	American Community Survey, U.S. Census
Percent of population with a BA degree or above	American Community Survey, U.S. Census

The data from CCRH also includes a number of descriptive program characteristics. This includes, for example, information on set-aside requirements; income targeting; the presence of various alternatives to on-site affordable housing production like land dedication, in-lieu fees, or off-site production; trigger size for requirements; and "incentives" or cost offsets for developers like density bonuses, fee reductions, fee deferrals, fee waivers. To test whether the relative strength of the inclusionary program has an effect on prices or production, stratified samples using the models above were run. However, the results from the stratified samples are not presented because: (1) no substantial differences were found in the effects of a "strong" program (defined in various ways) from an average program; (2) interviews with staff members in several cities that had inclusionary policies pre-*Palmer* revealed the data on program characteristics were unreliable and subject to excessive measurement error.

Descriptive Statistics

In 2009, there were 125 jurisdictions in California that had inclusionary housing policies applicable to rental development. These jurisdictions were largely clustered in the coastal counties, particularly in the Bay Area and in southern California. Figure 1 below shows the geographic concentration of inclusionary cities, by county, in 2009.

Figure 1: Percentage of California Jurisdictions in Each County with Inclusionary Housing Requirements Applicable to Rental Development in 2009



Author's analysis with data from California Coalition for Rural Housing

Table 2 shows that, on average, in 2009 inclusionary and non-inclusionary jurisdictions were similar on demographic metrics, although places with inclusionary policies were more educated and slightly larger. The mean population of inclusionary and non-inclusionary cities were 194,136 and 188,035 in 2009, respectively. Excluding San Francisco and Los Angeles, these means were 171,977 and 143,598, respectively. Using a two-sided t-test, these means are not statistically significantly different.

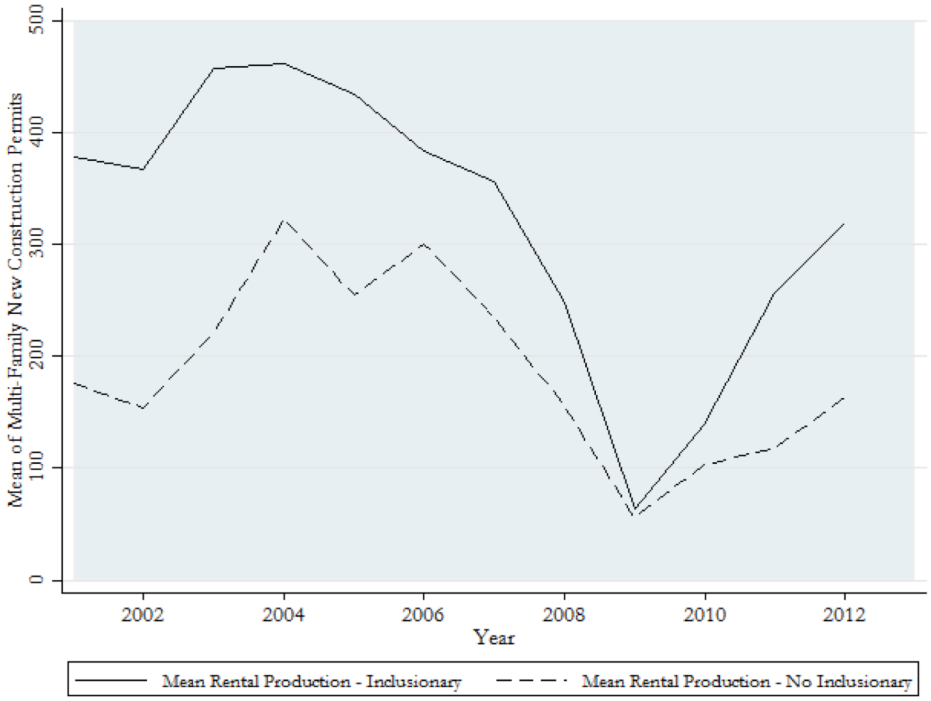
TABLE 2. Mean of Key Variables for Treatment and Control Cities in 2009

	Treatment Cities	Control Cities
Population Mean	194,136	188,035
Mean Median Rental Price	$1,319	$1,241
Mean Percent Employed	59.9%	58.4%
Mean Percent White	65.3%	61.7%
Mean Percent Black	6.4%	8.4%
Mean Percent Hispanic	26.9%	40.5%
Mean Percent with BA or above	39.1%	24.8%

Source: Author's analysis with data from the U.S. Census

Ideally this analysis would have also included a measure of housing production as a dependent variable. These results are not presented because a basic analysis shows that these estimates are likely to fail the assumption of parallel trends. In short, the *Palmer* decision occurred at an unusual time for new market-rate housing production in California due to the impacts of the foreclosure crisis and economic downturn.

FIGURE 2. Mean Annual Rental Housing Production of Cities With and Without Inclusionary Housing Policies, 2001–2012

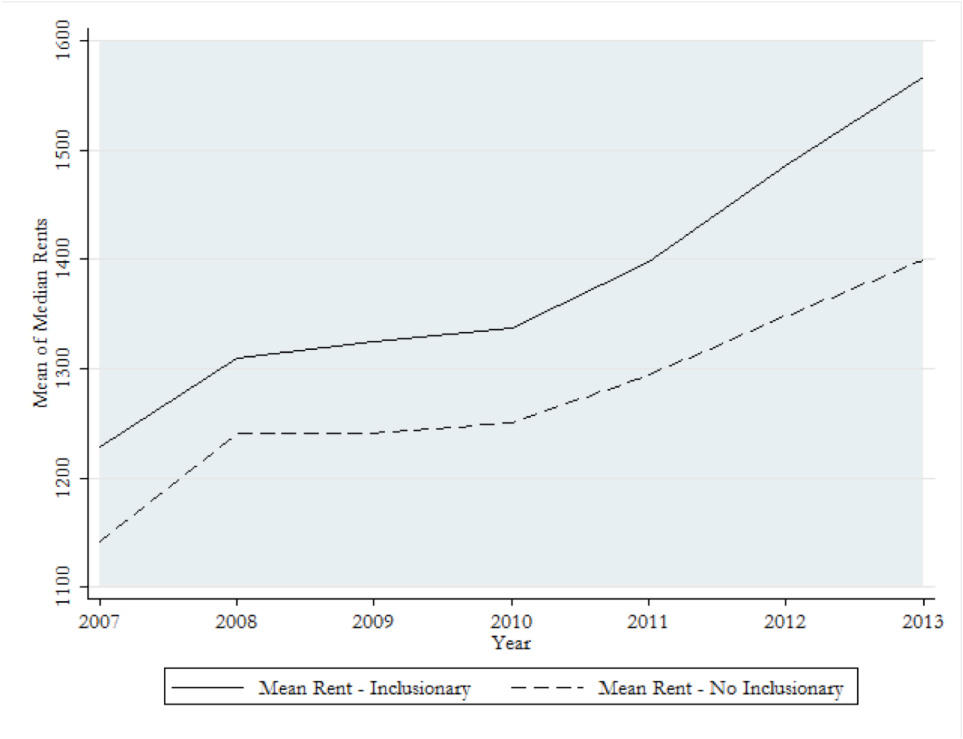


Source: Author's analysis with data from RAND

Using data from RAND California Residential Construction Statistics, which reports monthly permits for various types of new privately-owned residential construction by city in California, Figure 2 shows the number of residential permits for duplexes and buildings with three or more units (a reasonable proxy for production of rental housing) in California between 2001 and 2012. These permits plunged in 2009, down to 35,000 statewide, about half their rate in 2008, before picking back up in 2010. Production continued to lag between 2010 and 2012, however, housing production in the multi-family market rebounded faster than the single-family market (Department of Housing and Community Development 2012).

As Figure 2 shows, 2009 was the inflection point of rental housing production in California. While the trends are similar in inclusionary and non-inclusionary cities before and after 2009, it is clear that inclusionary cities rebounded from the crisis much faster and likely for reasons separate from the *Palmer* decision. Given that these differences cannot be controlled for with a reasonable set of covariates, any estimate for the effect of *Palmer* on housing production would likely be invalid. Ultimately, the cross-currents in the housing market were too strong in 2009 to reasonably isolate an effect of the *Palmer* decision on housing production. Hence, further analysis on the impact of inclusionary housing on housing production were not conducted.

FIGURE 3. Mean Annual Rental Housing Prices of Cities With and Without Inclusionary Housing Policies, 2001–2012



Source: Author's analysis with data from the U.S. Census

While this period was also a relatively unusual time for housing prices, a basic analysis of median rental prices reveals that they were much more stable over this period. Historic increases in rental prices stagnated between 2008 and 2010, although generally followed the same trends before 2008 and after 2010. Figure 3 above shows the unconditional means of median rental prices among inclusionary and non-inclusionary jurisdictions over the period for which data are available, 2007 – 2013.

Results

This section presents the results on the impact of inclusionary housing policies on median housing prices, upper quartile housing prices, and lower quartile housing prices.

Effects of *Palmer* on Market-Rate Housing Prices

Table 3 below displays results of the analysis from Equations (1) and (2) on median rental prices.

TABLE 3. Effects of *Palmer* Decision on Median Rental Prices

Dependent Variable	Log(Median Rental Prices)			
Variable	**(1a)**	**(1b)**	**(2a)**	**(2b)**
Treatment	**0.025 (0.008)****	**0.019 (0.008)***		
2007 Treatment Effect			0.013 (0.012)	0.015 (0.012)
2008 Treatment Effect			-0.010 (0.009)	-0.006 (0.009)
2010 Treatment Effect			**0.011 (0.009)**	**0.011 (0.009)**
2011 Treatment Effect			**0.014 (0.013)**	**0.014 (0.012)**
2012 Treatment Effect			**0.035 (0.014)***	**0.030 (0.013)***
2013 Treatment Effect			**0.044 (0.015)****	**0.035 (0.013)***
Percent with BA Degree		0.001 (0.001)		0.001 (0.001)
Percent Employed		0.002 (0.001)*		0.002 (0.001)*
Log of Total Population		0.177 (0.071)*		0.171 (0.073)*
Percent White		-0.001 (0.000)**		-0.001 (0.000)**
Percent Black		-0.002 (0.001)		-0.002 (0.001)*
Percent Hispanic		-0.001 (0.001)		-0.001 (0.001)
Percent Under 19		0.001 (0.001)		0.001 (0.001)
Constant	7.041 (0.006)**	4.878 (0.847)**	7.037 (0.007)**	4.957 (0.871)**
R^2	0.70	0.71	0.70	0.71
Observations	790	753	790	753

Robust standard errors clustered by county. Table excludes year and city/town fixed effects. * $p<0.05$; ** $p<0.01$

The results displayed in (1a) and (2a) show the basic model and event study model without the inclusion of covariates. Specifications (1b) and (2b) include all covariates. These results do not substantially change if Los Angeles and San Francisco are omitted together or separately from the model.

Using the results from specification (1b), on average, a *weakening* of inclusionary housing policies is associated with an average *increase* of about 2 percent in median rental prices. This finding suggests that developers do not respond to a weakening of inclusionary housing policies by lowering prices among market rate units—and may run contrary to the simple hypothesis that inclusionary housing leads to increased prices and reduction in development. However, as explored in greater detail below, they may respond by reducing the supply of affordable units—thereby causing resulting in the observed increase in price.

The event study specification informs these average results, showing there is no statistically significant difference between treatment and control groups during the years before the *Palmer* decision. After the *Palmer* decision, the treatment effect (i.e. the absence or presence of inclusionary housing on changes in median rental prices) is statistically significant in 2012 and 2013 at the 5% level, although it is not significant in 2010 and 2011.

While these findings suggest that reducing inclusionary housing requirements may lead to a net increase of housing prices, not a decrease, the result could mask a decrease in price at the upper end of the price distribution. Specifically, the increase in price of below market-rate units could outweigh a decrease in price for new market-rate units. If this is the case, it could be that developers reduced prices on market-rate units in response to *Palmer*, but that effect is washed out on average by an increase in price among low cost units. To explore whether this may be true, the effect on upper quartile rental prices is analyzed using the same specifications below.

Upper quartile price is a compelling measure of the price of new market-rate development. First, most new development is more expensive than average. Second, upper quartile prices are stable measures that do not suffer from composition effects. That is, they are not defined on a baseline measure of quality. Developers may respond to a tax either by reducing the number of units built or by reducing the quality of those units. If they are reducing quality, then a measure of rental prices for new market-rate development that relies on a quality index could fail to measure an effect of the policy, although one exists. Using upper quartile price solves this problem.

However, upper quartile price, as measured by the U.S. Census, does not include the value of new market-rate development. It would only reflect price effects if the price changes in new market-rate units also affected the price of existing, high-end units that are substitutes for those new units. While this is not an unreasonable assumption, the model using the per unit residential value of multi-family construction permits is also displayed below. This value is not robust to composition effects nor is it explicitly a rental price, but it would directly measure changes in the value of new market-rate development, which eases some concerns associated with upper quartile price.

TABLE 4. Effects of *Palmer* Decision on Upper Quartile Rental Prices and Residential Valuation of Multi-Family Units

Dependent Variables	Log (Upper Quartile Rent)		Log (Residential Valuation of Multi-Family Units)	
	(1a)	(1b)	(2a)	(2b)
Treatment	**0.007**		**-0.057**	
	(0.009)		**(0.089)**	
2007 Treatment Effect		0.013		0.049
		(0.012)		(0.154)
2008 Treatment Effect		-0.001		-0.127
		(0.010)		(0.111)
2010 Treatment Effect		**0.009**		**-0.014**
		(0.011)		**(0.102)**
2011 Treatment Effect		**0.007**		**-0.227**
		(0.017)		**(0.202)**
2012 Treatment Effect		**0.013**		**0.022**
		(0.014)		**(0.165)**
2013 Treatment Effect		**0.016**		
		(0.015)		
Percent with BA Degree	0.003	0.003	-0.009	-0.010
	(0.001)*	(0.001)*	(0.008)	(0.008)
Percent Employed	0.003	0.003	-0.003	-0.003
	(0.001)**	(0.001)**	(0.010)	(0.010)
Log of Total Population	0.080	0.078	-0.696	-0.777
	(0.074)	(0.076)	(0.338)*	(0.376)*
Percent White	-0.001	-0.001	-0.004	-0.004
	(0.000)	(0.000)	(0.003)	(0.003)
Percent Black	-0.002	-0.002	0.007	0.006
	(0.001)	(0.001)	(0.013)	(0.012)
Percent Hispanic	-0.001	-0.001	0.018	0.016
	(0.001)	(0.001)	(0.013)	(0.013)
Percent Under 19	0.000	0.000	0.005	0.008
	(0.001)	(0.001)	(0.021)	(0.021)
Constant	6.086	6.115	11.674	20.817
	(0.845)**	(0.865)**	(0.026)**	(4.236)**
R^2	0.65	0.65	0.01	0.06
N	781	781	416	400

Robust standard errors clustered by county in parentheses. Table excludes year and city/town fixed effects. * $p<0.05$; ** $p<0.01$

Table 4 shows, in both the basic model (1a) and the event study model (1b), this analysis fails to find a statistically significant effect of the *Palmer* decision on upper quartile rental prices. For both the basic model (2a) and event study model (2b), this analysis also fails to find a statistically significant effect of the *Palmer* decision on the per unit value of new residential multi-family units. These results do not substantially change if Los Angeles and San Francisco are omitted from the model together or separately. In short, this analysis fails to find an effect of repealing an inclusionary policy on either measure of price of market-rate units.

Effects on Housing Affordability

If inclusionary housing promotes overall affordability in the housing market, we may expect to see an increase in the lower quartile rental prices after the *Palmer* decision. To test this hypothesis, the same specifications are used with lower quartile rental prices.

TABLE 5. Effects of *Palmer* Decision on Lower Quartile Rental Prices

Dependent Variables	Log(Lower Quartile Rental Price)	
Variables	**(1)**	**(2)**
Treatment	**0.032 (0.009)****	
2007 Treatment Effect		0.033 (0.015)*
2008 Treatment Effect		0.008 (0.015)
2010 Treatment Effect		**0.037 (0.012)****
2011 Treatment Effect		**0.040 (0.018)***
2012 Treatment Effect		**0.051 (0.015)****
2013 Treatment Effect		**0.054 (0.016)****
Percent with BA Degree	-0.002 (0.002)	-0.002 (0.002)
Percent Employed	0.002 (0.001)*	0.002 (0.001)
Log of Total Population	0.154 (0.066)*	0.150 (0.068)*
Percent White	-0.000 (0.000)	-0.000 (0.000)
Percent Black	-0.002 (0.001)	-0.002 (0.001)
Percent Hispanic	-0.001 (0.001)	-0.001 (0.001)
Percent Under 19	-0.000 (0.002)	-0.000 (0.002)
Constant	4.872 (0.719)**	4.922 (0.753)**
R^2	0.64	0.65
Observations	753	753

Robust standard errors clustered by county. Table excludes year and city fixed effects. * $p<0.05$; ** $p<0.01$

The basic model (1) shows a statistically significant and positive effect of the *Palmer* decision on lower quartile housing prices. Under this model, on average, the *Palmer* decision is associated with a 3 percent increase in price among lower quartile rents, meaning that when inclusionary housing policies were weakened, rents in the lower quartile increased. This finding is robust to specification (2), which shows there is limited evidence of a pre-period difference between the treatment and control groups, but there is a difference in prices in every year following *Palmer*.

Some might argue it would be difficult to see a price effect from a small addition of below market-rate units that results from an inclusionary policy. First, these critics should not underestimate the amount of affordable housing produced under inclusionary policies in California, particularly in comparison to other programs that produce affordable units. Pre-*Palmer*, municipalities with inclusionary policies in California produced about 4,500 affordable units per year. For context, Rusk (2005) estimated that inclusionary housing policies with at least a 15 percent set aside produce twice as many affordable housing units as LIHTC funds. Brown (2001) estimated that inclusionary policies can double the number of affordable houses produced.

These critics should also not dismiss the competitive pressures of the marketplace. Either through signaling or by directly adding to the stock of low-cost housing, small changes in production can have discernable effects on rental prices, particularly when rental vacancy rates are low. For example, when a city adds units at the lowest levels of affordability, renters take those units who otherwise would have competed for moderate-income units. This occurs frequently with students and day laborers who are often willing to live together in larger groups to afford a rental unit that individually they would not have been able to afford. Often, these groups can out-compete families whose collective incomes are lower, although their individual incomes may be higher. To the extent that inclusionary policies weaken these competitive pressures, they may lead to decreases in rental prices even above the lower quartile.

Finally, the estimate in this paper is not substantially greater than the estimate of the effect of inclusionary policies on the price of below median prices found in Knaap, Bento, and Lowe (2008). In that paper, the authors estimate that the presence of an inclusionary policy is associated with a reduction in price among below median priced units of 0.8 percent over three years. The finding that eliminating an inclusionary policy is associated with an increase of price among lower quartile prices of 3.2 percent is not substantially higher.

Cities tend to implement inclusionary during times when prices are rising, particularly at the low-end of the spectrum, and Knaap, Bento, and Lowe's (2008) model cannot completely account for this reverse causality. Given these facts, it is striking that the authors find inclusionary housing policies are associated with lower prices for below median priced units. It is also likely that the authors underestimate the magnitude of negative effect of inclusionary policies on affordability of low-cost units. Finally, those authors measure prices below median while this paper examines prices in the lower quartile—a more accurate measure of the price of housing built with inclusionary housing policies. In this context, a 3 percent price effect is not substantially different or unreasonable.

Limitations

The specifications in this paper use an exogenous shock to inclusionary housing policies (the *Palmer* decision), and are therefore less likely to suffer from the typical form of endogeneity present in empirical investigations of inclusionary housing policies.

Nevertheless, this analysis has other limitations. For one, 2009 was a unique year for housing production and pricing in California. In particular, housing production was beginning to recover from the substantial decline that occurred with the housing crisis in 2007 and 2008. To the extent that inclusionary cities had different reactions to the post-recession period as non-inclusionary cities, or recovered at different times, this could pose a threat to internal validity.

One other major policy change occurred in this time frame that also substantially affected the affordable housing market in California. As part of the 2011 Budget Act, the California Legislature approved the dissolution of the state's 400 redevelopment agencies (RDAs). After a period of litigation, these agencies were officially dissolved as of February 1, 2012. To the extent that this policy change affected cities with inclusionary policies at greater rates than cities without inclusionary policies, it could confound the results. However, the timing of *Palmer* and the elimination of RDAs are not concurrent. Moreover, the events study models above find statistical significance in the years analyzed before dissolution in 2012. As a result, it is unlikely that this policy changes should affect the interpretation of these results.

The model almost certainly is affected by a heterogeneous treatment effect. Not all municipalities entirely suspended their inclusionary housing policies post-*Palmer*. Some municipalities continued to enforce their in-lieu fees and others even maintained an on-site option. There is no way of systematically identifying these cities. From interviews conducted in support of this study, it is likely that the decision to maintain a fee policy is not related to market prices or production, but rather a municipality's legal interpretation of the *Palmer* decision. As a result, this issue likely does not bias the results, but to the extent that it operates like classical measurement error, it may present problems for precision.

Discussion

This study contributes to the existing literature by addressing the effects of removing or weakening inclusionary housing policies on housing values and specifically analyzes the relationship between inclusionary housing policies and rental prices in the low-cost market. This analysis fails to find evidence that weakening an inclusionary policy is associated with a decrease in the rental price of high-cost housing units. These results also suggest that inclusionary housing policies promote housing affordability, particularly in the low-cost market.

Theory suggests that repealing an inclusionary policy would have the same, but opposite, market effects as introducing one (that is, after a city eliminates its inclusionary housing policy, rents should decrease, all else equal). However, the reality is that these two policy interventions are not mirror images. Housing and rental prices tend to be "sticky," that is, they do not move quickly and are often less responsive to market pressures than expected. As a result, developers

may not reduce prices in response to the repeal of an inclusionary policy. Indeed, this study failed to find that effect. This does not mean, however, that there may not be a positive price response associated with the introduction of an inclusionary policy.

However, the evidence in this paper may cast doubt on the strength of that relationship. Indeed, if developers consistently and aggressively increased prices in response to an inclusionary policy, and the rental market is assumed to be competitive, then they would almost certainly lower those prices in response to a reduction in these requirements. Given that no effect of *Palmer* on upper quartile rents was found, it may cautiously be inferred that these results run counter to the claim that inclusionary policies lead to higher prices among market-rate units. By contrast, with lower quartile rents, the *Palmer* decision is associated with an increase of rents by about 3 percent. From these estimates, it may be the case that inclusionary housing policies do have the potential to keep housing more affordable.

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