RCG

The Effect of Rent Control on New Housing Supply: A Bay Area Case Study

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Executive Summary

Building on the existing literature, the purpose of this study is to estimate the effect of rent control and its evolution over time on housing construction in the Bay Area, and in particular, in Berkeley, California. Our approach is a macro analysis, using place-level data over time for both rent-controlled and non-rent-controlled communities. In particular, the case study demonstrates how major changes in rent control rules following the statewide Costa-Hawkins Rental Housing Act in 1995, contributed to faster supply growth in the ensuing years for rent-controlled communities.

Existing Literature on Rent Control and Housing Supply

The vast majority of economists agree that artificially controlling apartment rents acts as a price ceiling that reduces the supply of housing over time. While the precise nature and severity of rent control are important factors, empirical studies have found numerous ways that rent control can reduce housing supply.

Misallocation of Housing

- Research suggests that rent control creates an inefficient market where renters continue to live in units that are too small, too large or not in the right locations to best meet their housing needs, and that this misallocation appears to be greater for longer-term residents.
- While rent control lowers displacement, it also limits renter mobility.
- Misallocation induced by rent control laws disproportionately affects lower-income households as a group more than wealthier households

Incentivizes Conversion of Property

- Policies that limit the amount of rent a property owner can collect, effectively reduce the returns an owner can gain on the apartment unit.
- Numerous studies demonstrate that rent control and rent stabilization laws lead to a reduction in the available supply of rental housing, particularly through conversion to ownership of controlled buildings.

Impedes New Development

- Rent control can limit new construction if there is considerable uncertainty regarding the potential for future changes to local rent control policies that would make it difficult for investors and developers to feel confident when considering the return on their investment.
- Rent control may limit new construction if there is no exemption for newer properties, or if the exemption provides only a short or a rolling timeline.

Spotlight on Rent Control in New York

Given the wide range of control policies over time and across jurisdictions, it is helpful to briefly highlight the many ways rent control has evolved over time through a spotlight on rent control in New York.

- Following numerous changes in prior decades, currently two types of rent-regulated units exist in New York City: rent controlled and rent stabilized.
- In June 2019, the New York State Legislature in Albany enacted the Housing Stability and Tenant Protection Act (HSTPA), which altered significant rent control regulations.
- The new law applies to approximately one million rent-stabilized units and made the rent regulation system permanent, while also allowing other New York municipalities outside the city to opt-in to stabilization provisions.
- HSTPA ended high-income deregulation, limited the definition of “owner-use” for deregulation purposes, extended any preferential rent for the duration of the tenancy, ended vacancy bonuses that allowed for rent increases upon vacancy, limited rent increases based on major capital improvements and made co-op or condo conversions harder to achieve.
- The long-term impact of the HSTPA is unknown. However, a report recently released by the National Apartment Association estimated that the properties in New York City affected by the law lost 20% or more of their value immediately following the passage of the bill.

Case Study of Rent Control in Berkeley and the Bay Area

History of Rent Control in Berkeley

- In 1980, Berkeley passed the Rent Stabilization and Eviction for Good Cause Ordinance, making strict rent control laws permanent. Rents in units built prior to 1980 were controlled permanently so that the rent did not change even when a tenant moved out and new tenants moved into the unit (full vacancy control).

- The most significant shift in rent control policy occurred in 1995, when the State of California passed the Costa-Hawkins Rental Housing Act (Costa-Hawkins), limiting the severity of rent control that local jurisdictions could implement.
- Costa-Hawkins required all cities with rent control measures, including Berkeley, to transition to vacancy decontrol, whereby landlords can reset the rent on a unit to a market rent when tenants vacate the unit.
- The new law also prohibited rent control on single family homes and condos, and excluded all newly built buildings from rent control, mitigating concerns within the real estate industry that cities could adopt new rent control measures at any time.
- Currently, there are more than 19,000 units in the city of Berkeley that fall under local rent control, reflecting all multifamily rental buildings built before 1980.
- More recently, the Tenant Protection Act of 2019 went into effect in January 2020, enacting statewide rent regulation in California and making it illegal for residential landlords to raise rents by more than 5%, plus the local rate of inflation, annually.

Methodology, Results and Conclusion

- RCG's case study used a regression analysis to examine how the change in rent control rules following the Costa-Hawkins Rental Housing Act in 1995 affected the growth in housing supply in rent-controlled cities, including Berkeley, as well as Oakland, San Francisco and San Jose.
- Even after accounting for employment growth, population density, rent growth and local place-specific factors, the supply of housing in these rent-controlled cities grew significantly faster following the loosening of rent control rules than during the period of more restrictive rent controls, even though newly built units were generally not included in local rent control ordinances during the pre-Costa-Hawkins period.
- Our model of multifamily construction estimated that the total housing stock in Berkeley as of 2019 was 0.65% larger than it would have been in the absence of the Costa-Hawkins law, accounting for 13.4% of the increase in total multifamily permitting in Berkeley in the post-Costa-Hawkins period. Relative to the increase in total multifamily construction during the period from 2000 through 2019, the share of multifamily construction attributable to Costa-Hawkins was somewhat smaller in Oakland (9.7%) and considerably larger in San Jose (19.1%) and San Francisco (19.6%).
- For the other two rent-controlled places in our sample—Hayward and Los Gatos—the rent-control variable was not statistically significant. However, this result was largely to be expected because these places have relatively weak forms of rent control, which would have been much less impacted by the rule changes resulting from the Costa-Hawkins legislation.
- Further regression results examining the impact on total housing stock growth, rather than just multifamily stock growth, highlight an additional positive impact on housing supply from single family construction in the post-Costa-Hawkins period, when rent control on single family homes was prohibited statewide.
- The total housing stock gain accounted for more than 11,400 additional units across the rent-controlled places in the study, including more than 3,900 additional single family units constructed in the post-Costa-Hawkins period that were essentially unlocked following the rent control law change. In Berkeley, the impact on total housing stock growth was approximately 1.3% of stock, or more than 650 housing units.
- We believe that the statewide legislation provided greater certainty for developers, investors and lenders—factors that bolstered housing construction in rent-controlled cities in the ensuing years.

Introduction

By artificially reducing housing costs for a select group of renters and distorting the balance of demand and supply in the housing market, rent control is generally thought to have several deleterious effects on the housing market. In particular, rent control tends to affect rent levels in both the short and long run; extend the tenure of those in rent-controlled units beyond when they otherwise would move, creating inefficiencies in the use of the housing stock; encourage conversion of existing rental units into ownership units; and, most relevant for this study, discourage building of new rental units over time, though this may depend heavily on the specific nature of the rent controls. There have been many studies of rent control, especially in New York and the Bay Area, which highlight these and other impacts over time, as discussed in greater detail in the review of the existing literature below.

Building on the existing literature, the purpose of this study is to estimate the impact of rent control and its evolution over time on housing construction in the Bay Area, and in particular, in Berkeley, California. Whereas various studies of some of the issues surrounding rent control in the Bay Area have taken a micro approach, using building-level data to determine rent impacts or tenure impacts, for example, our approach is a macro analysis, using place-level data in the Bay Area over time, and pooling the time series data across jurisdictions.[1] For purposes of this research, places include both rent-controlled and non-rent-controlled communities, in order to attempt to tease out the different behavior in terms of housing construction over time in rent-controlled places versus other nearby areas.

In order to provide context for the reader, the study begins with a review of the existing literature linking rent control to various elements of housing supply, as well as a spotlight on rent control in New York City over time. This is followed by a brief history of rent control regulation in the Berkeley and a detailed review of the data, methodology and results of the case study.

Existing Literature on Rent Control and Housing Supply

Research on the effects of rent control on housing supply is necessarily complicated by the diversity of rent control policies across states and cities, and the changes in rent regulation over time within each jurisdiction. Still, the vast majority of economists agree on the fundamental economic theory that artificially controlling apartment rents acts as a price ceiling that effectively reduces the supply of housing. While the precise nature and severity of rent control measures are important factors, in practice, empirical studies have found that rent control can reduce housing supply through: 1) a misallocation of housing; 2) the conversion of rental units to other uses; and 3) impeding new development.

Misallocation of Housing

Rent control may reduce the effective supply of available rental units through a misallocation of housing. Within major economic hubs, housing availability is scarce, and affordable housing is even more limited. Because it is challenging to find housing alternatives, many tenants may feel stuck in their units, unable to move or downsize, as their housing needs change along with their stage in life. Even as household needs change, renters understand that if they move, they are unlikely to find another unit with a similarly discounted rent because even in controlled units, rent increases are typically permitted upon unit vacancy. If a household rents another controlled unit, there may be a large initial rent increase. Furthermore, because of the scarcity, a rent-controlled unit may not be available. It takes time and effort to find available rent-controlled units. Lower-income households, whom rent-control policies are typically intended to benefit, often do not have as much time or flexibility as higher-income households to search for units. These households may not have as competitive credit scores and applications as higher-income households, and therefore tend to be less likely to qualify for available units. The housing scarcity, the advantages of below-market rents, and the high search costs all contribute to a misallocation of housing creating inefficiencies in the use of the housing stock.

Misallocation of housing under price controls is evident in a study published by the American Economic Review.[2] The study examined the apartment rental market in New York compared with other markets without rent control. Specifically, the study compared housing consumption in 1990, measured in terms of the number of rooms in an apartment, for households in New York versus households living in other metropolitan statistical areas without rent control, focusing on areas that had a large share of households living in buildings with five or more units. The results showed that 21% of New York apartment renters lived in apartments with either too many or too few rooms, relative to what would be expected if the households were living in a city without rent control. The research suggests that rent control creates an inefficient market with renters continuing to live in units that are too small, too large or not in the right locations to best meet their housing needs. The study found that this misallocation appears to be greater for longer-term residents.[3]

Many tenants choose not to leave their rent-controlled unit because the chances of finding another available and controlled unit is low. Moreover, the significant amount of time and effort involved in finding and applying for a controlled unit may also affect household decisions. In 2019, a study by researchers at Stanford University found that, while rent control lowers displacement, it also limits renter mobility.[4] Researchers examined the impact of a 1994 ballot initiative (Proposition 1) passed in San Francisco, which removed a rent control exemption for some small multi-family properties, while leaving similar buildings without rent control. Leveraging the implementation of the proposition, as well as data tracking individual migration in the early 1990s, researchers found that tenants covered by rent control remained in their apartments significantly longer than those without rent control. The study found that in the medium to long term, the beneficiaries of rent control were between 10% and 20% more likely to remain at their 1994 address relative to those in non-controlled units. Moreover, researchers found that while those who live in rent-controlled units benefit in numerous ways, there are large costs that are paid for by other renters because of the decreased rental housing and higher market rents, with much of the expense incurred by future residents of San Francisco.[5] Proponents of rent control argue that rent control benefits lower-income households who cannot afford to live in cities with ever-increasing rent. However, according to a 2016 Beacon Economics report, misallocation induced by rent control laws disproportionately affects lower-income households as a group more than wealthier households. Low-income households generally have more turnover than middle- and high-income households, which limits the benefits of rent control, as low-income households are faced with higher rents once they have to move to a new unit.[6] In effect, although a small group benefits from lower displacement, others may feel stuck in their units. More broadly, the lack of residential mobility can lock up supply inefficiently, resulting in less inventory available—a factor that can negatively affect the larger group of renters who are not able to attain or qualify for rent-controlled units.

Incentivizes Conversion of Property

Rent control may incentivize property owners to convert rental units to other uses, such as for-sale housing units or non-residential buildings**.** Policies that limit the amount of rent a property owner can collect, effectively reduce the returns an owner can achieve on the apartment unit. As a result, there is less of an incentive for property owners to rent their properties. Smaller property owners may move into the rental units themselves or leave them vacant on the market, while other owners may choose to convert the housing units to alternative property types that are not subject to rent control. Numerous studies demonstrate that rent control and rent stabilization laws lead to a reduction in the available supply of rental housing, particularly through conversion to ownership of controlled buildings. Historically, following the implementation of rent control, an increased number of landlords converted their rental properties in order to avoid facing the consequences of rent control. According to a 1998 study by Barton, later cited in a 2008 study by Hanson at UC Berkeley, the conversion of rental properties to owner-occupancy decreased the supply of rent-controlled units in the Bay Area in the 1980s and 1990s.[7] Specifically, between 1980 and 1990, Berkeley lost 3,309 rental units, a reduction of 12% of units, while the number of rental units in neighboring Oakland and Albany increased by 4.7% and 12.6%, respectively. The lost rental units were mostly converted to owner occupancy. Units were also converted in the 1980s through "tenancy-in-common," or TIC, arrangements, whereby landlords of smaller buildings with fewer than 10 units could sell their units to owner occupants. About 700 rental units were converted to owner occupancy through TICs between 1986 and 1992 in Berkeley. Hundreds of units were also lost in the 1980s from the closing of residential hotels, the removal of in-law style units from the market and the conversion of multi-unit buildings into large, single family homes. Hanson 2008 also found that the conversion of rental properties to owner-occupancy depleted the supply of stabilized units in Berkeley in the 1980s and 1990s.

Diamond 2019 examined landlord responses to the previously mentioned, 1994 policy change. After Proposition 1 passed, many property owners converted rental units to single family housing or condominiums, or renovated properties into new property types not subject to rent control. The study found that approximately 10% of the properties newly covered by the updated ordinance were redeveloped during the period from 1994 through 2016.[8] Moreover, this study found these properties were 8% more likely to convert to condo or TIC following the law change. As a result, there was a significant loss of rental supply in San Francisco in direct response to stricter rent control laws.

Beyond this research, evidence on the conversion of rental properties to other uses in response to rent control is strongly supported empirically by numerous studies focused on different markets around the country. For example, a 2006 Brigham Young University study of the Boston area found that rent control led to a significantly increased number of units converting from rental to ownership from 1990 to 1998.[9] Another report, conducted in 1998 by the Planning and Development Department at the City of Berkeley, found that from 1978 to 1994, rent control reduced the opportunity costs of converting units and encouraged alternative use of rental space.[10] In response to rent control policies, the supply of rental units in many affected markets declined significantly as a result of property conversions.

Impedes New Development

Rent control may also limit the creation of new rental supply by discouraging new development activity, especially without guaranteed exemptions for new properties and assurances that property owners can adjust rents to market level upon tenant vacancies. In particular, a UC Berkeley Fisher Center working paper, Rosen 2018, highlights that rent control can limit new construction if there is considerable uncertainty regarding the potential for future changes to local rent control policies that would make it difficult for investors and developers to feel confident when considering the return on their investment.[11] Furthermore, it is expected that rent control may limit new construction if there is no exemption for newer properties, or if the exemption provides only a short or a rolling timeline.

However, in almost all cases, modern rent control laws exclude all new construction from their ordinances. The impact of rent control on new construction is thus less clear-cut in empirical research. Given the variety of ways in which governments interact with construction processes, it is challenging empirically to test whether such expectations play a role in the building of new housing. Furthermore, the range of rules across states and cities vary greatly.[12] For instance, when examining the period from 1970 to 1990, Glaeser 2002 found different results in California than in New Jersey in terms of the relationship between rent control and housing supply. In California, the supply of housing in cities with rent control increased more slowly than it did in cities without rent control; however, the difference was not statistically significant until Glaeser accounted for population. In New Jersey, rent control significantly affected the housing stock, and the overall supply of housing declined in cities that had adopted rent control.[13]

In California, several rent control jurisdictions, including San Francisco, Berkeley and Santa Monica, had highly restrictive rent control regimes that were eased in 1995 by the enactment of Costa-Hawkins. In fact, Rosen 2018 highlights that from 1980 through 1994, San Francisco permitted an average of fewer than 1,200 multifamily units annually, including both apartment and condominium properties. In contrast, following Costa-Hawkins, construction activity increased considerably to an average of nearly 2,200 units per year from 1995 through 2017. [14] While not a detailed case study, Rosen 2018 highlights a similar pattern in Berkeley and Santa Monica, where new construction was more limited during the period that had more restrictive rent control measures and greater risk of frequent policy changes, and accelerated after statewide rules eased restrictions and provided developers and investors with greater policy certainty.

Research on the Canadian rental market also shows the impact restrictive rent controls can have on new rental construction. A 1988 study from the University of Toronto examined the effects of the Residential Premises Rent Review Act, which implemented rent control in Ontario beginning in 1975.[15] During the four-year period preceding the adoption of rent control, rental starts averaged more than 36,800 units. However, during the five years that followed the adoption of rent control, rental starts declined to an average of 14,500 units per year. Furthermore, in the long term, the study found that permits remained depressed, averaging 13,400 units annually from 1980 through 1986.

The impact of rent control on housing supply varies across markets with different regulation stringencies. However, historically, rent control further exacerbated housing shortages over time. Through a misallocation of housing, the conversion of rental units to other uses, and by impeding new development, rent control reduced housing supply across a number of cities within the United States during the last five decades.

Spotlight on Rent Control in New York

Given the wide range of rent-control policies over time and across jurisdictions, before delving into the case study of Berkeley, it is helpful to briefly highlight the many ways rent control has evolved over time, through a spotlight on rent control in New York.

Rent control was first enacted nationwide, during World War II, as part of the U.S. Emergency Price Act of 1942, which froze all rents at their March 1943 levels in order to prevent any rent increases during the war.[16] Five years later, the Federal Housing and Rent Act exempted units built after February 1947 from all future rent controls. Then, in 1950, the federal rent control system was gradually lifted but states were given administrative power to preserve rent control. The State of New York kept the rent control system but delegated the administration of rent control for New York City, to the city.

At the time, New York City faced significant population growth while housing supply growth stagnated. In response, the labor and tenant movement lobbied for continued rent control protection, and in 1950, New York City enacted the New York Emergency Housing Act, which continued to control rents in the city for apartments constructed prior to 1947. In 1969, the New York State legislature began to phase out the rent control program and implemented the Rent Stabilization Law of 1969, which adopted total vacancy decontrol for "rent-stabilized units," which enabled landlords to raise the rent to market level when a unit in a rent-controlled building was vacated. The most significant differences between the earlier rent control- and newer rent stabilization policies were the shift to vacancy decontrol and the mechanisms for how rents could be increased. Rent-controlled units had a price ceiling, called a maximum base rent, adjusted bi-annually. After an adjustment, landlords could raise the rent by a maximum of 7.5% per year until that ceiling was reached.

By contrast, rent-stabilized units had no price ceiling, but annual increases were set by a rent guidelines board each year—largely depending on local inflation. Vacancy decontrol was fully implemented by 1971, but subsequently repealed in 1974, when the Emergency Tenant Protection Act was enacted, putting an end to the vacancy decontrol of rent-stabilized units. Partial vacancy decontrol was initially adopted in 1994, and then expanded in 1997 through the Rent Regulation Reform Act, which included vacancy decontrol and high-rent and high-income deregulation (described below). The implementation of rent stabilization had a significant impact on housing supply in New York City. According to the Metropolitan

Council on Housing, there were more than one million rent-controlled apartments in New York City in the 1970s, and today there are about 27,000.[17]

Today, two types of rent-regulated units exist in New York City: rent controlled and rent stabilized. For an apartment to be rent controlled, a tenant or family member must have been living in the unit continuously since July 1971, and the building must have been built before 1947. Families can transfer the unit to another member and preserve the rent-control status. When the unit is vacated, it can become rent stabilized, or removed from regulation altogether if it is in a building with fewer than six units. No new rent-controlled units can be developed. Rent-controlled apartments are still subject to the "maximum base rent" system (referenced above).There is a rent ceiling that landlords are permitted to charge tenants, and the collectible rent can be raised annually until it reaches that maximum level. Under current rent laws, the maximum base rent can increase every two years and the maximum collectible rent is limited to the five-year average of the last Rent Guidelines Board increases.[18]

While only around 1% of New York City rental units are rent controlled, approximately 50% of the units are stabilized.[19] Rent stabilization applies to apartments in buildings with at least six units that were built between 1947 and 1974, buildings of that size built before 1947 where an apartment was leased after June 1971, and newer buildings that receive tax breaks for affordable housing. Rent increases for stabilized units are determined by the Rent Guidelines Board annually. In 2019, the board allowed for 1.5% increases for one-year leases and 2.5% for two-year leases.

In June 2019, the New York State Legislature in Albany enacted the Housing Stability and Tenant Protection Act (HSTPA), which altered significant rent-control regulations.[20] The new law applies to approximately one million rent-stabilized units and made the rent-regulation system permanent, while also allowing other New York municipalities outside the city to opt-in to stabilization provisions. After 2015, under vacancy decontrol, stabilized apartments could be deregulated if the rent exceeded $2,700, and if the tenant vacated the building. However, with the enactment of the HSTPA, that practice was repealed. The legislation also put an end to the vacancy bonus, which had allowed landlords to increase rents by 20% between tenants. Before the HSTPA, landlords could also increase the rents on apartments after making substantial renovations, a mechanism designed to help pass through the costs and encourage building maintenance. However, the new law substantially limited rent increases based on major capital improvements.[21]

Numerous other changes were included in the new law.[22] For example, the HSTPA ended high-income deregulation and limited the definition of "owner-use" for deregulation purposes. Previously, if a tenant in a rent-stabilized unit earned more than $200,000 per year for two consecutive years, the landlord could deregulate the unit. However, that practice was eliminated under the new rules. In addition, before June 2019, landlords and their family members could remove rent-stabilized tenants from multiple units to use as residences. Under the new rules, landlords will only be able to claim "owner use" for one apartment that must be used as their primary residence. The HSTPA also extended any preferential rent (discounted rent below the legally mandated limit) for the duration of the tenancy, whereas previously, landlords who managed rent-stabilized apartments were allowed to raise the rent to the legally mandated limit when a lease was renewed.[23]

Lastly, the law also made co-op or condo conversions harder to achieve, requiring 51% of current residents to agree to the conversion, instead of only 15%. The long-term impact of the Housing Stability and Tenant Protection Act is unknown. However, a report recently released by the National Apartment Association estimated that the properties in New York City affected by the law lost 20% or more of their value immediately following the passage of the bill.[24]

Case Study of Rent Control in Berkeley and the Bay Area

History of Rent Control in Berkeley

Following the period of national rent controls during World War II, Berkeley was the first city in California to enact rent control, through a charter amendment adopted in 1972. Four years later, the California Supreme Court ruled the Berkeley amendment unconstitutional because it did not allow for rent increases following operating cost increases.[25] However, the ruling also allowed local government to control rents in order to address serious housing problems. In 1978, a statewide, property tax reform ballot initiative, known as Proposition 13, contributed to new rent-control efforts, as municipalities attempted to ensure that tenants would share in the savings from reduced property taxes. [26]In 1979, Berkeley voted to temporarily reduce rents to provide renters with a property tax rebate. Measure I of the proposition required owners to set rents at the level charged in June 1978 and reduce the rents in order to reflect 80% of the tax savings that resulted from Proposition 13. However, owners who needed to make major property renovations could increase rents, if the renovations cost more than the 20% tax savings they retained. On the tenant protection side, the measure prohibited retaliatory evictions.

After Measure I expired at the end of 1979, the Berkeley City Council enacted a new temporary rent law that extended the provisions of Measure I for a six-month period. The new temporary law limited the maximum rent increase during the six-month period to 5% of the lawful rent and ended rent increases based on increased mortgage costs.

In 1980, Berkeley passed the Rent Stabilization and Eviction for Good Cause Ordinance, making rent control laws permanent.[27] The law required rent registration and called for the establishment of a Rent

Stabilization Board to implement the requirements of the ordinance. Rents in units built prior to 1980 were controlled permanently, so that the rent did not change even when a tenant moved out and new tenants moved into the unit (full vacancy control). Rent ceilings could only be increased in accordance with Annual General Adjustments (AGAs) granted by the Board, or pursuant to Individual Rent Adjustment (IRA) petitions filed with the Board.

In 1982, Berkeley passed a Charter Amendment establishing an elected Rent Stabilization Board and became the first California city to enact commercial rent control.[28] The Tenants' Rights Amendments Act of 1982 amended the Rent Ordinance to increase penalties for non-compliance and to cover previously exempt, owner-occupied, three- and four-unit buildings.

Across all rent-controlled units, rent increases to cover operating and maintenance costs were allowed. Subsequent court rulings upheld the constitutionality of this rent control system, but also required inflation adjustments for profits in addition to operating costs.[29] The Berkeley Rent Stabilization Board responded by passing rent increases averaging 33% in January 1992. These increases were challenged in court but upheld as within the discretionary powers of the elected Rent Board.

In 1995, the State of California passed the Costa-Hawkins Rental Housing Act (Costa-Hawkins), which took steps to limit the severity of rent control that local jurisdictions could implement.[30] Most notably, Costa-Hawkins required all cities with rent control measures, including Berkeley, to transition to vacancy decontrol, whereby landlords can reset the rents on individual rental units to a market rent when tenants vacate the unit. From 1996 to 1998, a phase-in of vacancy decontrol was implemented across California. New tenants could be charged only an additional 15% of the rent paid by the prior tenant or 70% of the prevailing market rate for comparable units, whichever was greater.

Then, in 1999, full vacancy decontrol began. Landlords could charge new tenants the market price for rental units. Local governments could no longer limit the initial rent for new tenancies, although limitations could still be set on subsequent rent increases, as long as tenants remain in the unit. The new law also permanently removed all single-unit properties from rent control, including both single family houses and condos (except for tenancies that began prior to 1999), and excluded all newly built buildings from rent control. The Costa-Hawkins legislation mitigated concerns within the real estate industry that cities could adopt new rent control measures at any time, especially those that could apply to recently constructed properties.[31] Currently, there are more than 19,000 units in the city of Berkeley that fall under local rent control, reflecting all multifamily rental buildings built before 1980.[32] In 2004, Berkeley voters approved an amendment to the Rent Stabilization Ordinance to end annual cost studies and instead index the Annual General Adjustment to the rent at 65% of the increase in the regional CPI-All Items.

More recently, the statewide Tenant Protection Act of 2019 went into effect in January 2020, enacting statewide rent regulation and making it illegal for residential landlords to raise rents by more than 5%, plus the local rate of inflation, annually. The state law exempted buildings constructed during the last 15 years, based on a rolling date such that new buildings will transition into the statewide rent regulation each year.[33] The new legislation also required landlords to show "just cause" for lease terminations, non-renewals and evictions. These rules will not override more stringent existing local rent control laws but will cover buildings that are more than 15 years old, which were not already covered by local ordinances.

Since the start of the COVID-19 pandemic, Berkeley enacted an emergency eviction moratorium.[34] Landlords in Berkeley cannot charge late fees on the deferred rent and cannot evict for unpaid rent. The only exceptions are when necessary for health and safety reasons or in accordance with the Ellis Act which allows landlords in California to withdraw property from the rental market. Renters unable to pay rent due to COVID-19-related financial losses have twelve months to repay any back rent after the local state of emergency expires. In the future, tenants may need to prove how they were financially impacted by COVID-19. Furthermore, in April, Berkeley adopted a provision to allow landlords and tenants to agree to rent reductions during the state of emergency without reducing the lawful rent ceiling.

Data and Methodology

In order to examine the impacts of rent control on housing supply in individual communities in the Bay Area, and in Berkeley in particular, it is useful to begin with a description of data used in our macro, place-level analysis.

Place Selection & Housing Supply

There are 80 Census places in the six-county Bay Area. For each of these places, RCG utilized jurisdiction-level data on housing permit authorizations for new construction (annual, multifamily, single family and total permits as reported by Census and HUD), as well as housing stock data (existing supply of housing) at the decennial census years. In theory, new permit authorizations should provide a reasonable proxy for the growth in housing supply over time. However, relative to the housing stock, permit data are subject to potential over counting if permits are filed and then construction does not move forward, or if housing units are removed from the stock over time, as well as potential undercounting related to data reporting issues in individual jurisdictions over the long history of the survey. In order to determine how well the permit data and housing stock data line up for each place, we started with the 1980 Census housing stock numbers, and then grew that stock by the permit numbers. The latest decennial census stock numbers we have are from 2010. We then matched by place the officially reported 2010

Census housing stock numbers to those based on growing the 1980 stock by permits. While these numbers do line up well in many places, there is a fairly wide distribution of errors, both positive and negative, likely reflecting the combination of underreporting in the housing permit data, as well as cancelled projects, conversions and demolition of existing housing over time. In addition, the Census housing stock figures include minor categories such as mobile homes or RVs, which would not be included in housing permit statistics. However, these categories tend to be very small in Bay Area cities, and have generally not been a significant source of new housing in recent decades.

For our empirical work, we wanted to limit the sample of places included in the study to those places where the errors in this comparison were relatively small, in order to provide greater assurance that housing permits were effectively capturing the growth of total housing supply, and therefore would represent a reliable supply metric for our research. For the purposes of this study, the error cutoff was +3.6% for the upside bound (2010 Census stock was greater than calculated stock based on historical permits), and -3.3% for the downside bound (Census stock was less than calculated stock). The upper and lower error bounds are not symmetric because in order to include San Francisco (a rent-controlled place) we had to increase the upside bound to +3.6%. This screen reduced the number of places under consideration to 41 places, including all of the rent-controlled places in the Bay Area.

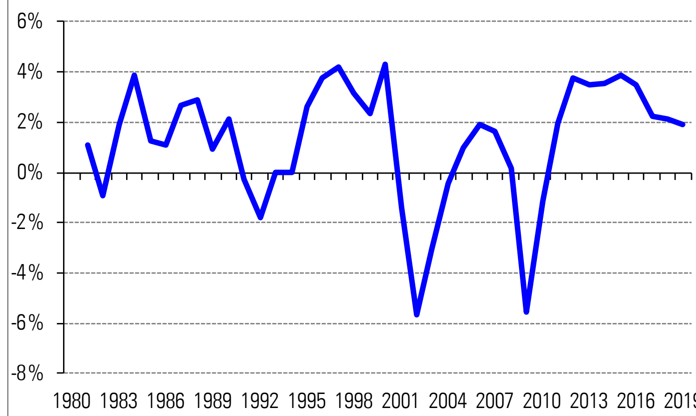
Additionally, several smaller places, as well as places with unique characteristics or data constraints were also eliminated (a total of seven places), leaving us with a sample size of 34 places, including all of the rent-controlled places.

The permit data for the places in our sample are, not surprisingly, very volatile. It is not uncommon for a large number of multifamily units to be permitted in a given place in one year, followed by few or no permits issued for the following several years. To some extent this reflects that fact that one sizable new building can account for hundreds of individual units. In addition, construction activity tends to be lumpy with multiple projects often moving forward at the same time when developers determine that the combination of vacancy rates, achievable rents and the financing environment justify new construction. As a result, housing stock growth by place is also very volatile. Yet, it is this variable from which we are trying to determine the impact of rent control on housing supply, and more specifically, the impact of the major change in rent-control rules that occurred with the passage of the statewide Costa-Hawkins legislation circumscribing rent control in California. Please see Appendix A for graphs of the time series of multifamily permits in the sample places.

Demand Drivers

In order to analyze trends in supply and the potential impact of rent control on construction, it is important to capture the broader economic environment as a key factor driving both demand for housing and the construction environment. For this demand driver, we focus on payroll employment in the entire six-county Bay Area, which captures the vast majority of the commute radius for workers in the area. Payroll employment in the six Bay Area counties (two metro areas: San Jose and San Francisco-Oakland) averaged 1.2% per year from 1980 to 2019 (compound average growth rate). This measure captures the number of jobs on private and public sector payrolls in the region. It is an effective measure of hiring overtime and is therefore a major factor determining new housing demand. Notably, payroll employment data at the place level are not available. Instead, place-level employment data are limited to resident data; that is, how many residents in a given place are employed, regardless of the location of the job. See the nearby chart of the growth of Bay Area payroll employment.

Payroll Employment Growth in the Bay Area



Note: Includes six-country Bay Area
Sources: BLS, RCG

The employment data are straight forward and are widely available from the Bureau of Labor Statistics. We use payroll employment for the entire Bay Area as the relevant measure of employment for each of our sample places. The reason is because widespread commute-modes allow a resident of any part of the Bay Area access to a job in any other part of the Bay Area. Those commute-modes include BART; SamTrans, Golden Gate, and East Bay bus routes; the CalTrain line on the peninsula; light rail in Silicon Valley and San Francisco; ferries from Marin and Oakland to San Francisco; and a developed system of bridges, tunnels, and freeways for cars and buses. In short, the demand driver we use for each of our sample places is job growth in the entire Bay Area.

Demographics & Population Density

Demographic growth is also an important driver of household formation and housing demand in a regional sense, though at the place level, population growth in each individual community is often more closely linked to, or even limited by, the growth and availability of housing. For the 34 places included in the study, the simple average of population growth is 1.2% per year, and the average housing stock

Population & Housing Stock Growth						
	1980		2019		Compound Annual Growth Rate	
Place	Population	Housing Stock	Population	Housing Stock	Population	Housing Stock
Alameda	63,400	27,802	81,618	32,800	0.4%	0.6%
Antioch	42,150	15,661	112,423	36,238	2.2%	2.5%
Belmont	24,600	9,953	26,983	10,972	0.3%	0.2%
Berkeley	**103,700**	**46,334**	**122,358**	**51,005**	**0.2%**	**0.4%**
Concord	103,300	39,490	130,435	47,664	0.5%	0.6%
Dublin	14,350	4,133	64,132	23,353	4.5%	4.2%
Fremont	131,200	45,486	233,404	80,462	1.5%	1.5%
Gilroy	21,350	7,218	56,854	18,544	2.4%	2.5%
Half Moon Bay	7,300	2,726	12,480	4,876	1.5%	1.4%
Hayward	**94,000**	**35,870**	**160,197**	**50,446**	**0.9%**	**1.4%**
Hercules	5,500	1,843	25,488	8,693	4.1%	4.0%
Larkspur	11,150	5,590	12,331	6,312	0.3%	0.3%
Livermore	48,450	16,637	91,436	32,165	1.7%	1.6%
Los Gatos	**26,450**	**10,971**	**30,720**	**13,461**	**0.5%**	**0.4%**
Menlo Park	25,800	11,541	35,454	13,853	0.5%	0.8%
Mill Valley	13,050	5,636	14,743	6,558	0.4%	0.3%
Milpitas	37,400	11,659	76,211	26,538	2.1%	1.8%
Morgan Hill	16,800	5,566	45,745	15,361	2.6%	2.6%
Mountain View	58,300	28,576	81,639	39,855	0.9%	0.9%
Newark	32,100	9,460	48,164	15,303	1.2%	1.0%
Oakland	**339,300**	**150,274**	**430,753**	**186,085**	**0.5%**	**0.6%**
Pinole	14,250	5,067	19,563	6,950	0.8%	0.8%
Pleasant Hill	25,500	10,140	34,286	14,045	0.8%	0.8%
Pleasanton	35,250	11,665	79,392	30,198	2.5%	2.1%
Richmond	74,100	29,082	110,793	40,389	0.8%	1.0%
San Carlos	24,800	10,350	29,652	12,161	0.4%	0.5%
San Francisco	**679,400**	**316,608**	**891,021**	**397,828**	**0.6%**	**0.7%**
San Jose	**622,800**	**216,653**	**1,047,871**	**330,915**	**1.1%**	**1.3%**
San Leandro	64,100	28,086	88,296	32,443	0.4%	0.8%
San Mateo	77,700	34,268	103,569	41,096	0.5%	0.7%
San Rafael	44,900	19,200	60,259	24,094	0.6%	0.8%
Santa Clara	86,900	34,858	127,401	53,593	1.1%	1.0%
South San Francisco	49,300	18,020	67,221	22,216	0.5%	0.8%
Sunnyvale	106,400	44,021	155,766	61,224	0.8%	1.0%

Note: Bold represents rent-controlled places.

Sources: Census, RCG

growth is also 1.2% per year, both matching the average employment growth rate in the Bay Area. There is, however, considerable variation in the growth rate of housing stock and population by place. The maximum growth rate for housing stock is 4.5% per year, and for population the maximum is 4.2% per year (both represent Dublin in Alameda County). The minimum housing stock growth rate was 0.2% per year in Berkeley (also in Alameda County); and for population, the minimum growth rate was 0.2% (Belmont in San Mateo County). See the nearby table.

In total, the 34 places in the sample accounted for 4.7 million of the 6.7 million residents in the Bay Area; that is, the sample consists of places with 70% of the regional total population. The places provide a good representation of both slower-growing, more mature places (San Francisco, Oakland, and Berkeley) and faster-growing, newer communities (Dublin, Hercules, and Pleasanton). Although the place selection was not done on a stratified sampling basis, we believe that the places in our sample not only cover most of the region in terms of population, but also fully represents the diversity of growth and economic conditions across the Bay Area so that the conclusions of the study are not biased because of our sample selection.

In order to capture the location of residential construction across places in the sample, our analysis incorporated population density as another supply determinant. In any given economic or demand environment, existing density is a factor that contributes to where builders choose to build and where people choose to live. Specifically, density data were prepared using the number of square miles in each sample place as of 1990 and then dividing population in the place at each point in time by that area. The calculation gives us a time series of population per square mile by place. This represents a modest simplification as places do sometimes annex land and become larger entities over time. We did not pursue changes in land area for all of our 34 sample places for the 39 years in the sample period. Instead, we used the 1990 land area as reported by the Census and held that metric constant throughout the entire time interval.

Cost of Housing

Next, the research considers the cost of housing over time, a factor that is necessarily linked to the demand-supply balance. In this case, collecting the data at the place level resulted in some challenges. First, the rent data that we would like to have at the place level are not available annually throughout the study period. The overall median gross rent level by place is, however, available for the decennial census years. In order to fill in the years between census numbers, we used a spline interpolation. This interpolation produces a smooth series in 10-year segments for the 39 years in the sample period. Although not ideal, the series moves the level of rent according to the average change in rent annually for years between census observations. The same is true for the median home value.

In addition to the decennial rent data, we explored using rent data from the American Community Survey (ACS) produced annually by the U.S. Census to supplement the decennial series in the more recent period. However, the limited availability of place-level annual data in a number of the sample jurisdictions and the considerable volatility in the reported annual rent estimates for those places where annual data were available (likely reflecting the relatively small sample sizes in the annual survey) limited the viability of this approach. Additionally, using the ACS annual series on rent by place (since 2010 for those places where available) produces empirical results that are nearly indistinguishable from results obtained using the interpolated rent series. For this reason, while we used the most recent 2018 ACS rent data to extend the decennial data to a more recent period, we elected not to rely on the highly volatile annual ACS surveys for the inter-period years.

The simple average rent growth for our rent data series in the 34 sample places was 4.8% per year over the time span since 1980, with a maximum of 5.2% (Mountain View and Sunnyvale) and a minimum of 3.7% (Hercules). By comparison, the CPI index for the rent of primary residence increased by an average (compounded) annual rate of 3.6% per year (1981 to 2019). The average rent gain for our sample places in the Bay Area was 1.2 percentage points higher per year than the national average.

Local Factors & Rent Control

Because of diverse zoning requirements across communities, the wide range of developer requirements at the permitting stage, variations in land costs, and differences in general place "friendliness" to development, our model used 34 individual place dummy variables to capture the unique fixed effects influencing housing supply by place over and above those factors already captured by the other set of variables described above.

Finally, in order to capture the impact of rent control, and more specifically the way changes in rent control rules influenced housing supply, we created two sets of rent-control dummy variables, one set with a cutoff at 1995, when the Costa-Hawkins bill was enacted, and one set with a cutoff at 1999, when the Costa-Hawkins law was fully phased in. These two sets of rent-control dummy variables were run separately to determine whether there was any difference in the impact on new housing construction (in terms of

Bay Area Rent Control Places

Place	Rent Control Severity
Berkeley	High
Hayward	Low
Los Gatos	Low
Oakland	Medium
San Francisco	High
San Jose	Low

Note: Excludes Alameda, Mountain View and Richmond

Source: RCG

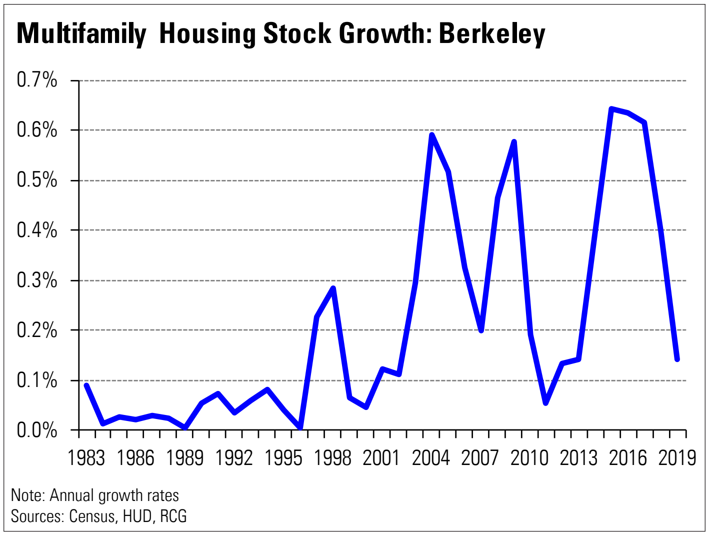
both multifamily and total housing permits) before and after these two dates, and, if so, where.

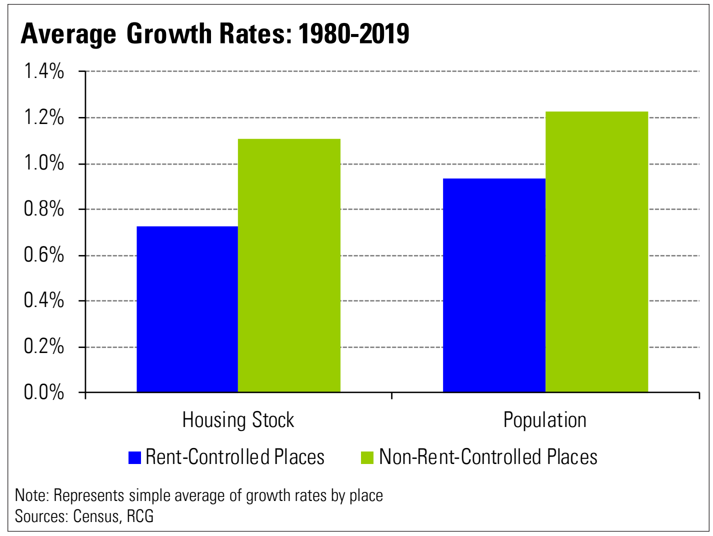
The list of six rent-controlled places for which we constructed these rent-control dummy variables is given in the nearby table. We note that in addition to these six places, there are three more rent-controlled places where rent control was enacted in 2016—Alameda, Mountain View and Richmond. The late introduction of rent control in those places renders impossible the pre- and post-analysis of the Costa-Hawkins rent control law (passed in 1995).

Results of the Empirical Work

With the data described above, RCG estimated the parameters of a supply equation with the growth (relative to total housing stock) of multifamily permits determined, as a function of Bay Area payroll employment growth, population density, and lagged rent growth. Note that we lagged rent growth because it takes some time for changes in achievable rent to influence decision-making among developers, investors and lenders. Additionally, the lag has the added benefit that it makes rent growth pre-determined in a statistical sense, that is, not dependent on the variable we are looking to explain (multifamily or total construction). It is reasonable to expect rent growth and multifamily construction are contemporaneously jointly dependent (i.e. the factors determine each other) and lagging rent growth gets around that problem.

In addition, as highlighted previously, the model utilized 34 fixed effect variables, as well as a rent-control dummy variable for each of the six rent-control places. The fixed-effect variables capture the impact on construction due to all the reasons that one place varies from another, unrelated to the independent variables of employment growth, rent growth and density. These could be zoning differences, cost differences or differences in how the place government views development in general. The rent-control dummy captures how the post-Costa-Hawkins period differs from the pre-Costa-Hawkins period after all the fundamental, structural impacts are taken into account. This rent-control impact is the main objective of the analysis.





Initial Observations

First, it is informative to examine the growth of housing stock in Berkeley due to multifamily permits (see the nearby chart). Because of the volatility in the series, we calculated the two-period moving average in an effort to smooth out some of this volatility. Still, even the two-period moving average exhibits a great deal of volatility. However, a cursory glance at this chart for Berkeley shows that multifamily building was at a virtual standstill in the pre-Costa-Hawkins period.

Second, for the entire sample of places, housing-stock growth averaged more than twice as fast in non-rent-controlled places as compared with rent-controlled places. Population growth, likewise, was nearly twice as fast in non-rent-controlled places (see the nearby chart). In most cases, rent control was instituted in places that are

Real Rent Growth By Place

Place	Median Rent 1980	Median Rent 2000	Median Rent 2018	Real Annual Rent Growth 1980-2000, Pre-Costa-Hawkins	Real Annual Rent Growth 2001-2018, Post-Costa-Hawkins	Difference
Berkeley	**$245**	**$740**	**$1,612**	**1.9%**	**2.2%**	**-0.3%**
Antioch	$273	$786	$1,658	1.7%	2.0%	-0.3%
Pinole	$325	$855	$1,752	1.2%	1.8%	-0.6%
Pleasant Hill	$338	$984	$1,946	1.7%	1.6%	0.1%
San Mateo	$346	$1,168	$2,301	2.5%	1.6%	0.9%
Newark	$364	$1,093	$2,128	1.9%	1.6%	0.3%
Oakland	**$231**	**$696**	**$1,354**	**1.9%**	**1.5%**	**0.4%**
San Francisco	**$285**	**$928**	**$1,805**	**2.3%**	**1.5%**	**0.8%**
Mill Valley	$396	$1,233	$2,392	2.1%	1.5%	0.6%
Alameda	$281	$899	$1,720	2.2%	1.5%	0.8%
Mountain View	$332	$1,222	$2,314	3.0%	1.4%	1.6%
Gilroy	$270	$936	$1,761	2.7%	1.4%	1.3%
Dublin	$440	$1,356	$2,535	2.0%	1.3%	0.7%
Hayward	**$299**	**$921**	**$1,712**	**2.0%**	**1.3%**	**0.7%**
San Carlos	$355	$1,181	$2,182	2.4%	1.2%	1.2%
Pleasanton	$346	$1,219	$2,251	2.7%	1.2%	1.5%
Livermore	$324	$1,035	$1,909	2.2%	1.2%	1.0%
Sunnyvale	$336	$1,270	$2,332	3.1%	1.2%	1.9%
Richmond	$236	$764	$1,400	2.3%	1.2%	1.1%
Fremont	$337	$1,196	$2,188	2.8%	1.2%	1.6%
Santa Clara	$339	$1,238	$2,261	2.9%	1.2%	1.8%
Hercules	$501	$1,111	$2,021	0.3%	1.2%	-0.9%
Concord	$319	$880	$1,583	1.5%	1.1%	0.4%
South San Francisco	$321	$1,057	$1,888	2.4%	1.1%	1.3%
San Jose	**$325**	**$1,123**	**$1,970**	**2.6%**	**1.0%**	**1.7%**
Milpitas	$391	$1,279	$2,241	2.4%	0.9%	1.4%
Menlo Park	$355	$1,319	$2,254	3.0%	0.8%	2.2%
Half Moon Bay	$367	$1,269	$2,140	2.6%	0.7%	1.9%
Los Gatos	**$381**	**$1,331**	**$2,209**	**2.7%**	**0.6%**	**2.1%**
San Rafael	$326	$1,125	$1,844	2.6%	0.6%	2.1%
San Leandro	$281	$918	$1,491	2.3%	0.5%	1.8%
Morgan Hill	$315	$1,112	$1,766	2.8%	0.4%	2.4%
Larkspur	$402	$1,321	$2,053	2.4%	0.3%	2.1%
Belmont	$348	$1,116	$2,147	2.3%	1.5%	0.8%
Average Non-Rent-Controlled Places				2.3%	1.2%	1.1%
Average Rent-Controlled Places				**2.3%**	**1.4%**	**0.9%**
Difference				0.0%	-0.2%	

Note: Real rent adjusted for inflation. Sorted by post-Costa-Hawkins rent growth. Bold represents rent-controlled places.
Sources: Census, RCG

more mature and, on average, tend to have a higher density and grow more slowly. The exception is Los Gatos, which ranked 32nd out of 34 sample places in terms of density, as of 2019 density, at 2,950 people per square mile. In comparison, the population density in Berkeley was 11,653 people per square mile in 2019, second only to San Francisco in our sample.

Third, it is also informative to examine the behavior of median gross rent over time and across the sample places. The nearby table shows real rent growth by place for the pre- and post-Costa-Hawkins periods. Nominal rent growth was higher across all sample places, on average, in the pre-Costa-Hawkins period, but so was inflation. If we correct for inflation, real rent growth by place is interesting. It shows that, on average for our sample, real rent growth was nearly the same for rent-controlled places and non-rent-controlled places in the pre-Costa-Hawkins period, the period when rent regulation was most rigid in cities with highly restrictive forms of rent control. In fact, only 15 basis points separate the annual average growth rate for the two groups of places, with a slightly higher average rent growth rate in non-rent-controlled places. However, in the post-Costa-Hawkins period, rent-controlled places had somewhat higher average rent growth, though the differences were still modest—1.36% per year in rent-controlled places, compared with 1.09% per year for the non-rent-controlled places. Although the difference in growth rates is small, the ability for below-market rents to "catch up" to market rents upon vacancy following the shift to vacancy decontrol under the Costa-Hawkins rules may have contributed to this stronger average rent growth over time. However, it is important to note that this was not a major area of focus in our case study and is instead a topic in need of future research.

Model Results

We ran four regression equations analyzing the variation in the supply of housing across places and over time. We compared both the total stock of housing and the multifamily housing stock during time periods with different rent-control stringency levels using a 1995 cutoff separating the pre- and post-Costa-Hawkins periods, which was when the law was passed, and also with a 1999 cutoff separating the periods, which was when the law was fully phased in. The results of these regression equations are reported in the nearby tables. Across all four versions, the results show that the three independent variables (Bay Area employment growth, population density and rent growth) are all statistically significant (meaning their coefficients are highly likely to be different from zero) at a minimum at the 95% level of confidence (lagged home value growth in the 1999 cutoff equation for the total stock is significant at the 90% level of confidence). Also, all of the independent variables have the expected sign (positive or negative), providing a logical framework for the way various factors influenced housing supply. That is, with a high level of statistical confidence, the model shows that over the study period, higher levels of Bay Area employment growth were

Regression Equation: Multifamily Stock Growth

Variables	Coefficients (1995 Cut-Off)	t-Statistic	Coefficients (1999 Cut-Off)	t-Statistic
Bay Emp Growth	0.025	2.64	0.029	3.06
Density	-0.003	-7.49	-0.003	-7.80
Rent Growth (lagged)	0.055	5.34	0.052	5.06
Adjusted R-Squared	0.329		0.331	
Root Mean Squared Error	0.008		0.008	

Notes: Analysis used rent control dummies and place fixed effects.
All coefficients are significant at the 95% level.
Source: RCG

Regression Equation: Total Stock Growth

Variables	Coefficients (1995 Cut-Off)	t-Statistic	Coefficients (1999 Cut-Off)	t-Statistic
Bay Emp Growth	0.076	4.59	0.082	4.98
Density	-0.010	-13.65	-0.010	-14.02
Median Home Value Growth	0.025	2.09	0.020	1.68
Adjusted R-Squared	0.437		0.441	
Root Mean Squared Error	0.014		0.014	

Notes: Analysis used rent control dummies and place fixed effects. All coefficients are significant at the 95% level, except median home value growth, which is significant at the 90% level.
Source: RCG

Impact of Costa-Hawkins on Multifamily Stock Growth: 2019

Rent Control Places	Coefficients Post C-H Impact (1995)	Coefficients Post C-H Impact (1999)	Severity of Rent Control	Total Stock in 2019	Post Costa-Hawkins MF Boost in RC Places	Post C-H Impact % of Stock
Berkeley	0.0053	0.0065	High	51,005	332	0.65%
Hayward	(-0.0045)	(-0.003)	Low	50,446	n/a	n/a
Los Gatos	(0.0016)	(0.002)	Low	13,461	n/a	n/a
Oakland	0.0064	0.0068	Medium	186,085	1,265	0.68%
San Francisco	0.0097	0.0102	High	397,828	4,058	1.02%
San Jose	0.0059	0.0056	Low	330,915	1,853	0.56%
Total Rent Control Places				**1,029,740**	**7,508**	**0.73%**
Bay Area Total				**2,550,327**		**0.29%**

Notes: Parenthesis indicates not different from zero at the 95% level.
Post Costa Hawkins Total Boost in RC Places uses the coefficients from 1999 as the Costa-Hawkins full phase-in date.

associated with higher levels of multifamily construction growth; higher density was associated with lower multifamily construction growth; and higher rent growth the prior year was associated with faster multifamily construction growth in the following year. In addition, each place has a unique constant, all of which are highly statistically significant, indicating that, not surprisingly, unobserved local place-specific factors are important in determining housing supply growth (see Appendix B).

The rent-control dummy variables, for both the 1995 and 1999 cutoff dates, are shown in the nearby table. When examining the impact on multifamily construction, four of the six rent-controlled places (Berkeley, Oakland, San Francisco and San Jose) showed a statistically significant, positive impact on supply in the post-Costa-Hawkins period, as compared with the pre-Costa-Hawkins period, using both the 1995 and 1999 cutoff dates. Even after accounting for employment growth, density, rent growth and local, place-specific factors, the supply of housing in these rent-controlled cities grew faster following the loosening of rent control rules than during the period of more restrictive rent controls.

The result is particularly insightful considering the fact that newly built units were technically already exempted from rent control during the pre-Costa-Hawkins period. In Berkeley, for example, rent control only applied to buildings built before 1980. However, prior to Costa-Hawkins, there was nothing to prevent individual jurisdictions from changing their rent-control rules, such as new construction exemption dates, at any point. The passage of Costa-Hawkins, however, provided statewide legislation that exempted newer buildings from rent control and prevented local jurisdictions with existing rent control from changing the dates for exemptions based on building completion dates. In addition, Costa-Hawkins prevented cities from applying rent control to single family homes and required a shift to vacancy decontrol. The new law still allowed for rent control, but a much more lenient version of rent control, compared with some relatively more stringent forms of rent control in the pre-Costa-Hawkins period, as described in detail in the description of the history of rent control in Berkeley above. Of particular importance, the statewide rules created more certainty regarding what rent-control actions could and could not be taken at the local level. These factors—stable new construction exemption dates, more certainty and more leniency in rent control with less room for local overrides, and vacancy decontrol—resulted in a positive impact on multifamily construction during the post-Costa-Hawkins period in four out of the six rent-controlled places in the Bay Area.[35]

For the other two rent-controlled places—Hayward and Los Gatos—the rent-control dummy variable was not statistically different from zero using either the 1995 or 1999 cutoff dates. However, this result was largely to be expected because these places have relatively weak forms of rent control, which would have been much less impacted by the rule changes resulting from the Costa-Hawkins legislation. Not surprisingly, the other demand and local factors in the model seem to effectively explain much of the trend in multifamily construction growth in these cities, and the remaining variation in construction growth did not differ significantly in the pre- and post-Costa Hawkins periods for those two places.

After accounting for the structural and local factors affecting multifamily construction, the magnitude of the impact on multifamily construction we detected was moderate, but significant. For example, as a result of this model, we estimate that as of 2019, the total housing stock in Berkeley was 0.65% larger than it would have been in the absence of the Costa-Hawkins law. Or stated another way, during the pre-Costa-Hawkins period, multifamily construction was suppressed by that amount, other things being equal, even though newly built units were generally not included in local rent-control ordinances throughout the entire interval. While this seems small in absolute terms, it accounts for 13.4% of the increase in total multifamily permitting in the post-Costa-Hawkins period. Relative to the increase in total multifamily construction during the period from 2000 through 2019, the share of multifamily construction attributable to Costa-Hawkins was somewhat smaller in Oakland (9.7%) and considerably larger in San Jose (19.1%) and San Francisco (19.6%). See nearby table.

The total number of housing units in the Bay Area as of 2019 was about 2.55 million. In a broader Bay Area context, the building gain

Share of Pre- and Post-Costa-Hawkins Multifamily Permits Explained by Costa Hawkins

Average Annual Multifamily Permits	Berkeley	Oakland	San Francisco	San Jose
1980-1999	32	281	1,288	1,703
2000-2019	162	968	2,375	2,213
Difference (Post C-H Minus Pre C-H)	130	687	1,088	510
Period Total Difference in Multifamily Permits	2,463	13,058	20,664	9,694
Estimate of Costa-Hawkins Impact	332	1,265	4,058	1,853
% of Total Difference due to Costa-Hawkins	**13.5%**	**9.7%**	**19.6%**	**19.1%**

Note: Based on regression of multifamily construction growth, does not include single family housing impact.

Impact of Costa-Hawkins on Total Housing Stock Growth: 2019

Rent Control Places	Coefficients Post C-H Impact (1995)	Coefficients Post C-H Impact (1999)	Severity of Rent Control	Total Stock in 2019	Post Costa-Hawkins Total Boost in RC Places	Post C-H Impact % of Stock
Berkeley	0.00960	0.01280	High	51,005	653	1.28%
Hayward	(0.0012)	(0.003)	Low	50,446	n/a	n/a
Los Gatos	(0.0012)	(0.002)	Low	13,461	n/a	n/a
Oakland	(0.0085)	0.01000	Medium	186,085	1,861	1.00%
San Francisco	0.02000	0.02240	High	397,828	8,911	2.24%
San Jose	(0.0088)	(0.0078)	Low	330,915	n/a	n/a
Bay Area Rent Control Places Total				**1,029,740**	**11,425**	**1.11%**
Bay Area Total				**2,550,327**		**0.45%**

Notes: Parenthesis indicates not different from zero at the 95% level.

Post Costa Hawkins Total Boost in RC Places uses the coefficients from 1999 as the Costa-Hawkins full phase-in date.

in the Bay Area resulting from the Costa Hawkins law was small, but significant compared with the pre-Costa-Hawkins environment. Compared with the total stock in the six rent-controlled places, we estimate that the post-Costa-Hawkins impact from additional multifamily construction amounts to more than 7,500 units, or 0.73% of total stock. Compared with the total Bay Area housing stock, the impact from additional multifamily construction is about 0.29% of total housing stock. Essentially, based on the effects on multifamily construction alone, the stricter forms of rent control in the pre-Costa-Hawkins period, and the uncertainty associated with investors not knowing what kind of rent control local jurisdictions might impose in any given year, deprived rent-controlled places of nearly three-quarters of a percent of their housing stock in 2019, as uncertainty surrounding what local jurisdictions might do regarding rent control, suppressed construction in the pre-Costa-Hawkins period relative to the post period.

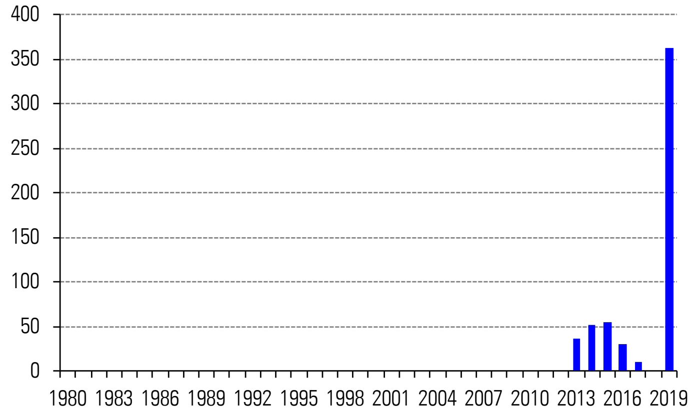
The second version of the regression equations examined the impact on total housing stock growth, rather than only multifamily stock growth. The results highlight an additional positive impact on housing supply from single family construction in the post-Costa-Hawkins period, when rent control on single family homes was prohibited statewide. After accounting for the other factors discussed previously, the total positive impact as of 2019, in terms of both single and multifamily construction during the post-Costa-Hawkins period relative to pre-Costa-Hawkins, accounted for 1.11% of total stock in the rent-controlled places, and 0.45% of total stock in the entire Bay Area. Reference to the nearby table shows the impact from gains in both single family and multifamily construction as a total. As of 2019, the total stock gain from additional multifamily and single family construction exceeded 11,400 units across the rent-controlled places, including more than 3,900 additional single family units constructed in the post-Costa-Hawkins period that were essentially unlocked following the rent-control law change. That is, in addition to bolstering the broader construction environment in communities with rent control, by ensuring that local jurisdictions could not decide to apply rent control to single family homes in the future, Costa-Hawkins led to a small, but detectable and statistically significant impact on single family construction as well. We estimate a total impact on the housing stock in the post-Costa-Hawkins period in the Bay Area, including both single family and multifamily units, of approximately 1.1% of the total housing stock. In Berkeley, the impact on total housing stock growth was approximately 1.3% of stock, or more than 650 housing units. These results do not capture the supply impact from conversion of existing stock from rental to ownership units (either outright or through TICs)

Conclusion

RCG's case study examined the impact of rent control and its evolution over time on housing construction in the Bay Area. More specifically, our research considered how the change in rent-control rules following the Costa-Hawkins Rental Housing Act in 1995 affected the growth in housing supply in rent-controlled cities, including Berkeley, as well as Oakland, San Francisco and San Jose. Even after accounting for employment growth, density, rent growth and local place-specific factors, the supply of housing in these rent-controlled cities grew faster following the loosening of rent control rules than during the period of more restrictive rent controls. This result was statistically significant, even though newly built units were generally not included in local rent control ordinances during the pre-Costa-Hawkins period. In addition to the change in the nature and severity of rent control rules (the shift to vacancy decontrol and statewide exemptions for new construction and single family homes), we believe that uncertainty regarding the potential for future changes to local rent-control policies was an important factor that limited development in the pre-Costa-Hawkins period. The statewide legislation provided greater certainty for developers, investors and lenders, factors that bolstered housing construction in rent-controlled cities in the ensuing years.

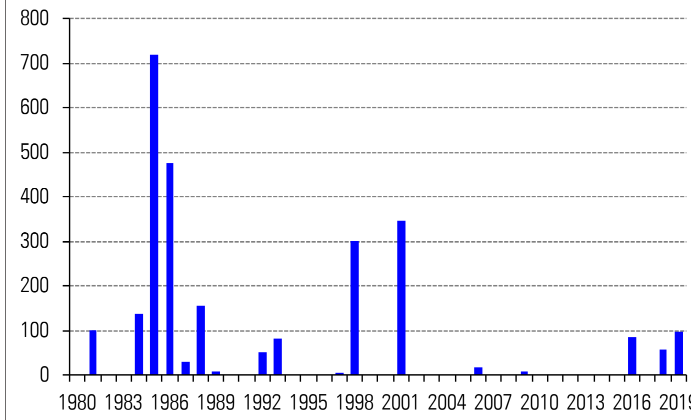
Appendix A

Multifamily Permits: Alameda



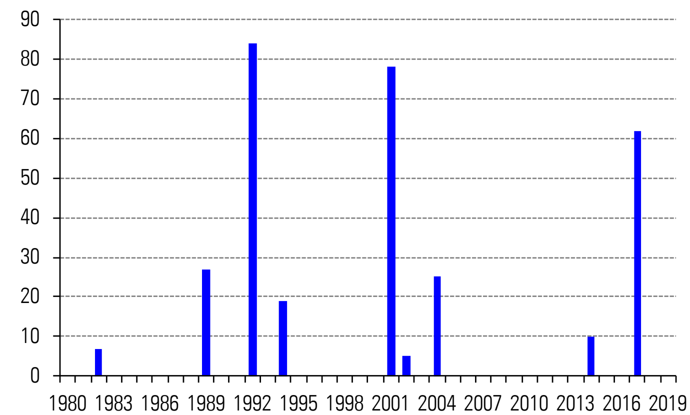
Sources: Census, HUD

Multifamily Permits: Antioch



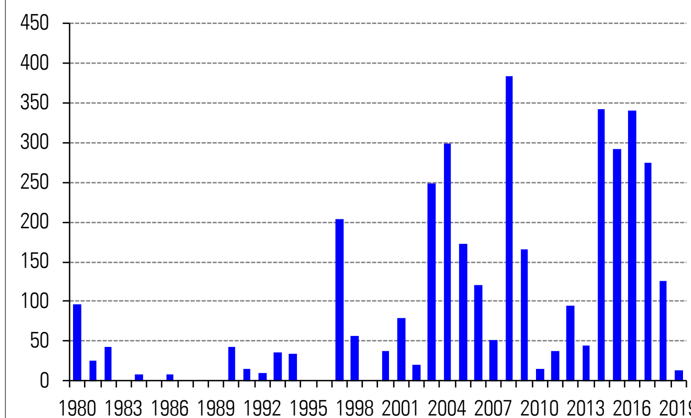
Sources: Census, HUD

Multifamily Permits: Belmont



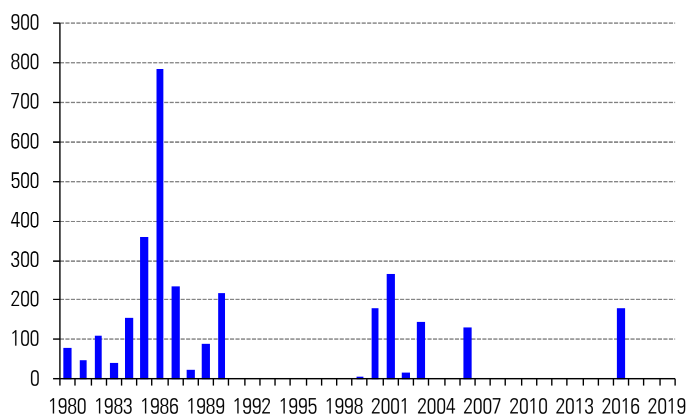
Sources: Census, HUD

Multifamily Permits: Berkeley



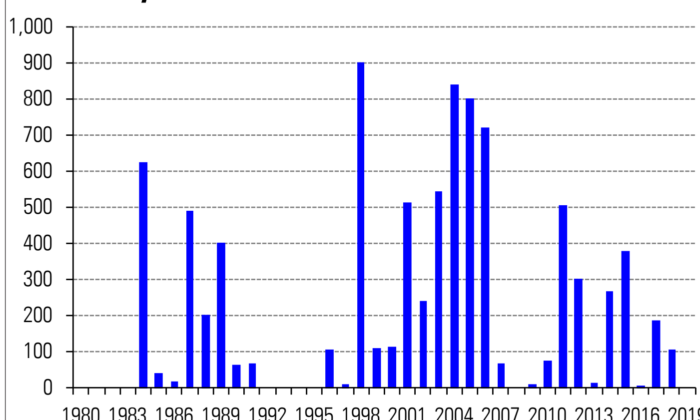
Sources: Census, HUD

Multifamily Permits: Concord

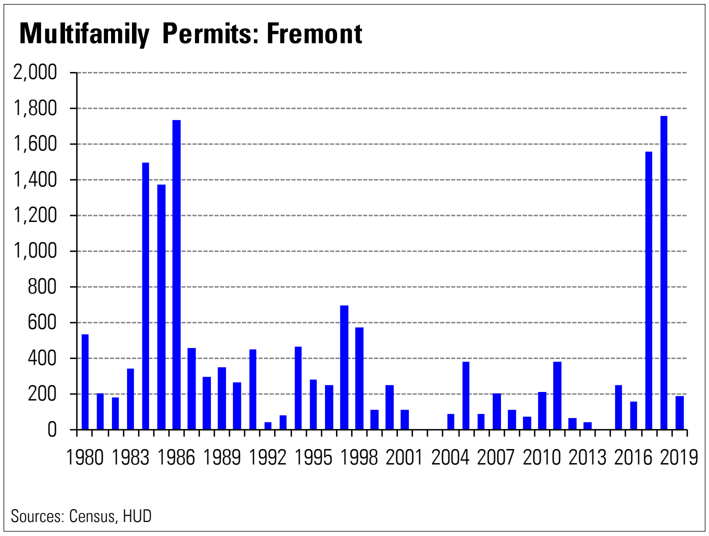


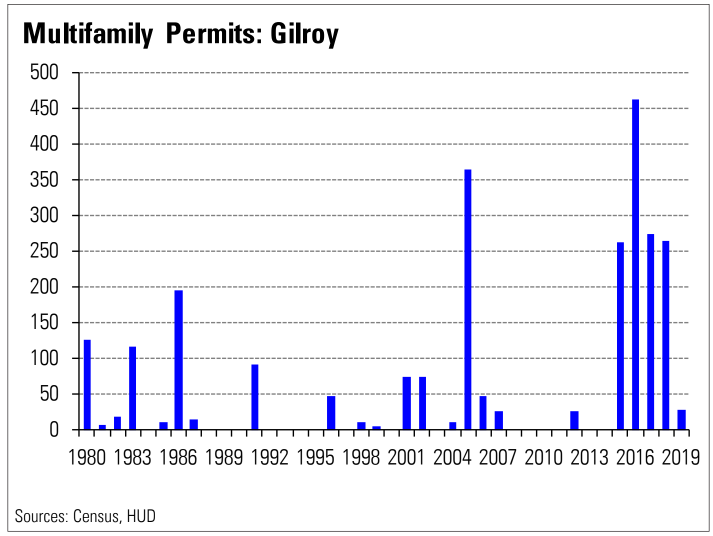
Sources: Census, HUD

Multifamily Permits: Dublin



Sources: Census, HUD


Multifamily Permits: Fremont
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Gilroy
500
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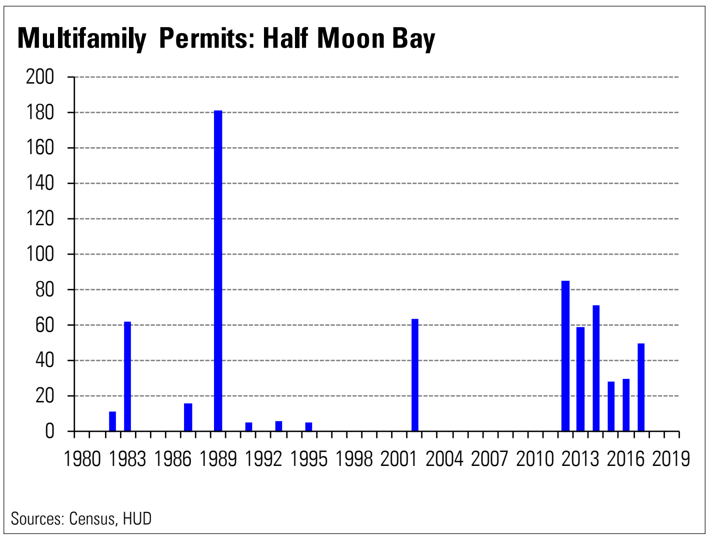
400
350
300
250
200
150
100
50
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Half Moon Bay
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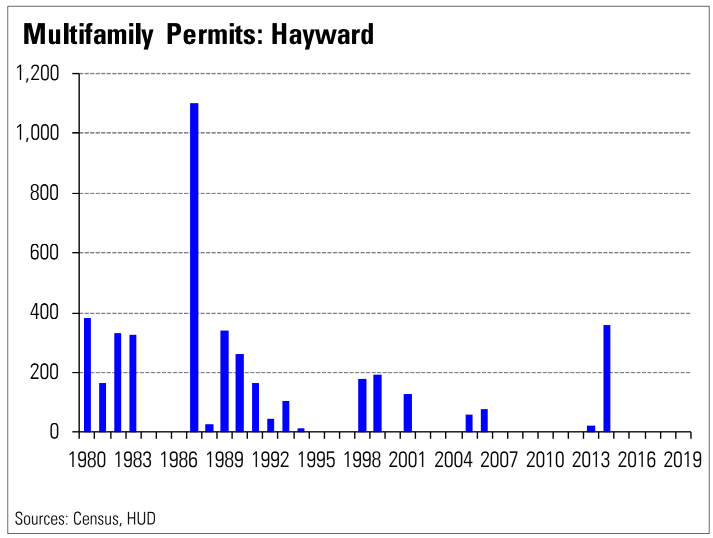
140
120
100
80
60
40
20
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Hayward
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600
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200
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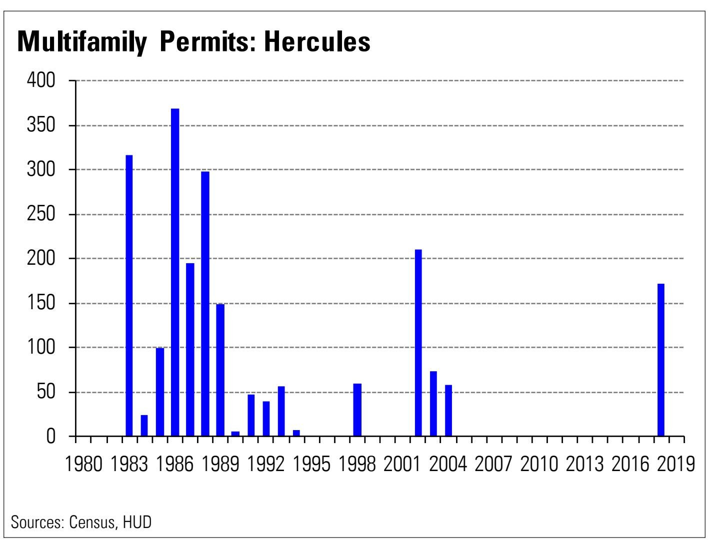
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Hercules
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350
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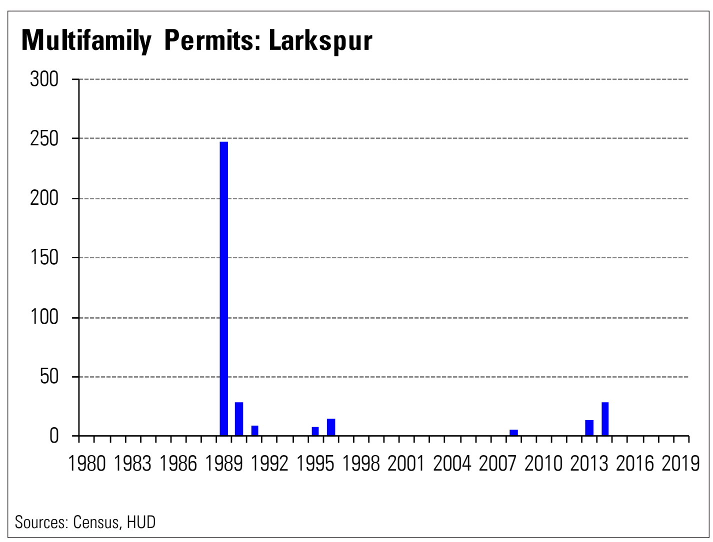
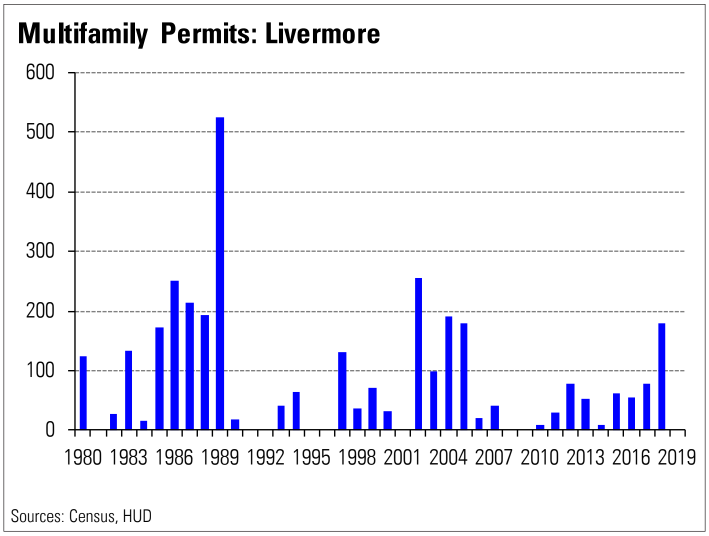
200
150
100
50
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Larkspur
300
250
200
150
100
50
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Livermore
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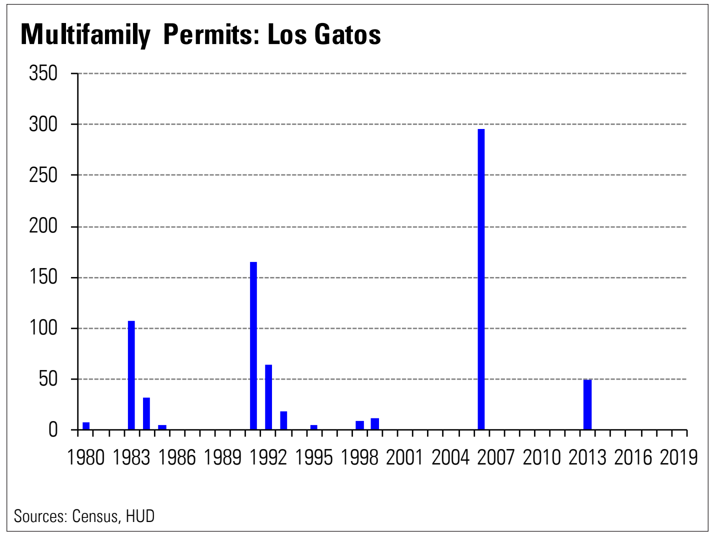
500
400
300
200
100
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Los Gatos
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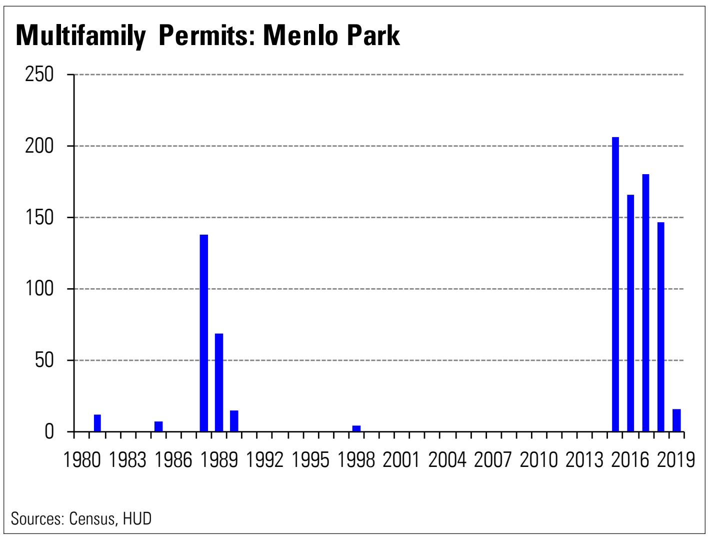
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Menlo Park
250
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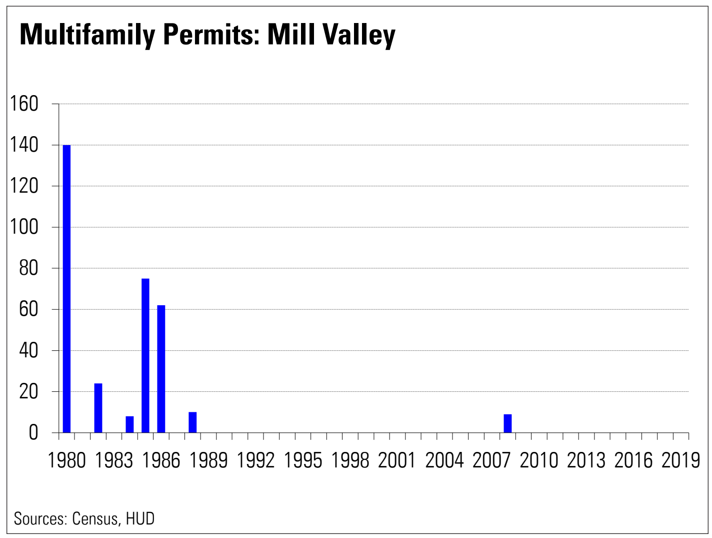
150
100
50
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Mill Valley
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120
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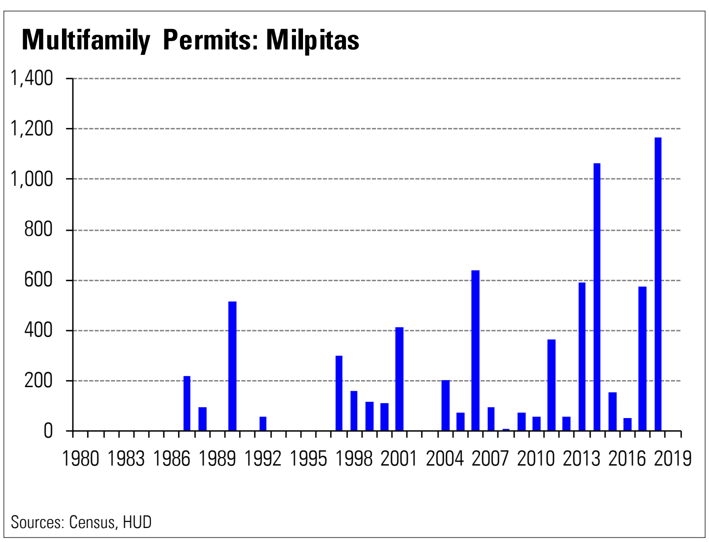
80
60
40
20
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Milpitas
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600
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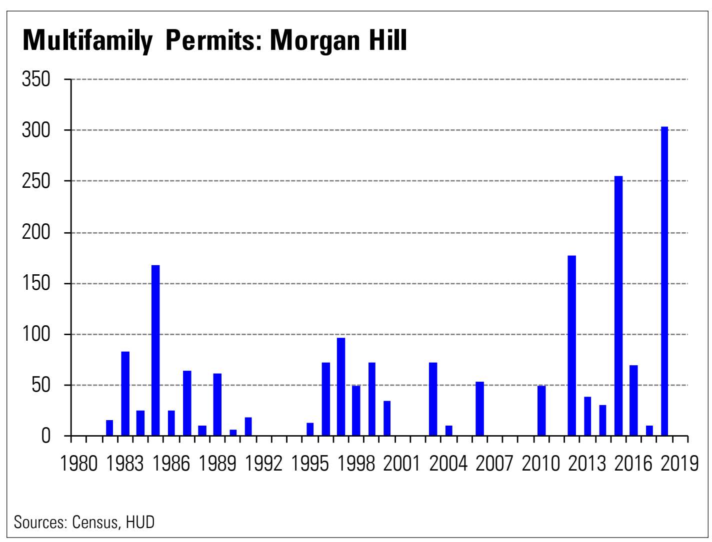
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Morgan Hill
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250
200
150
100
50
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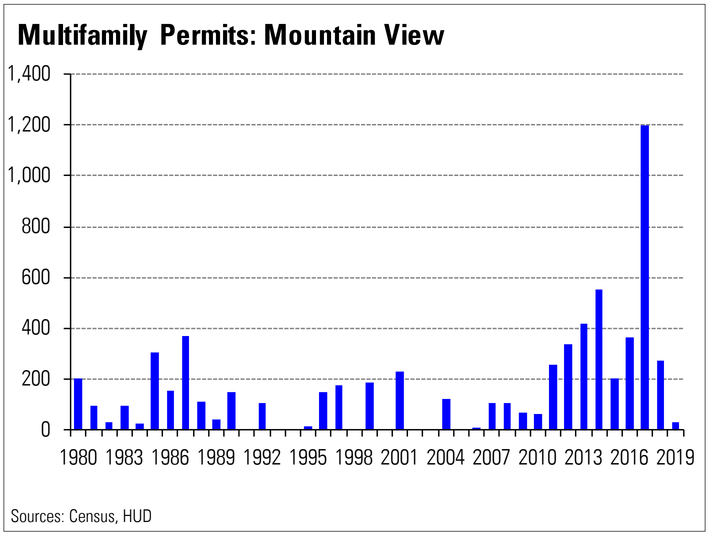
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Mountain View
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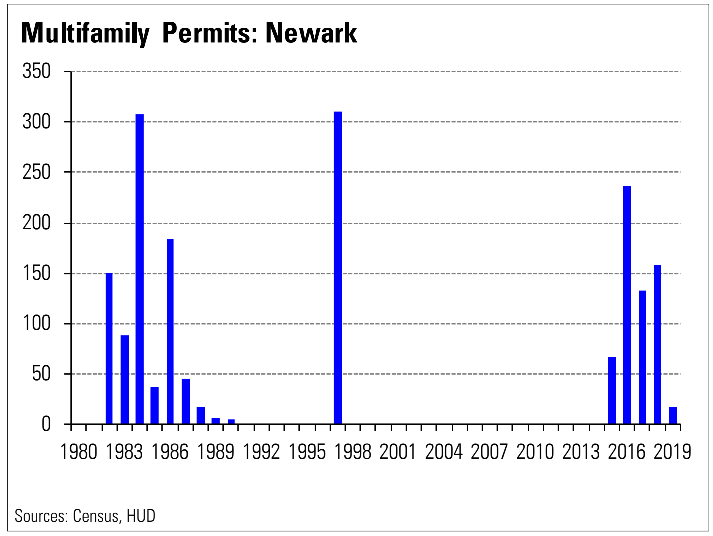
600
400
200
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Newark
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300
250
200
150
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50
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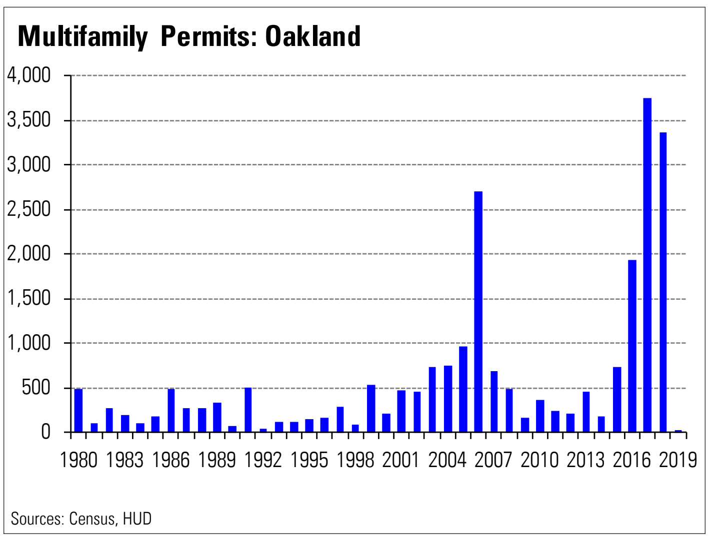
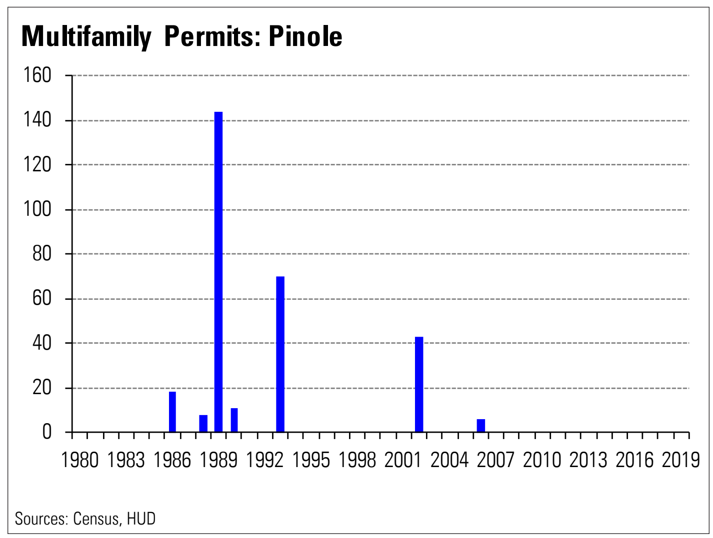
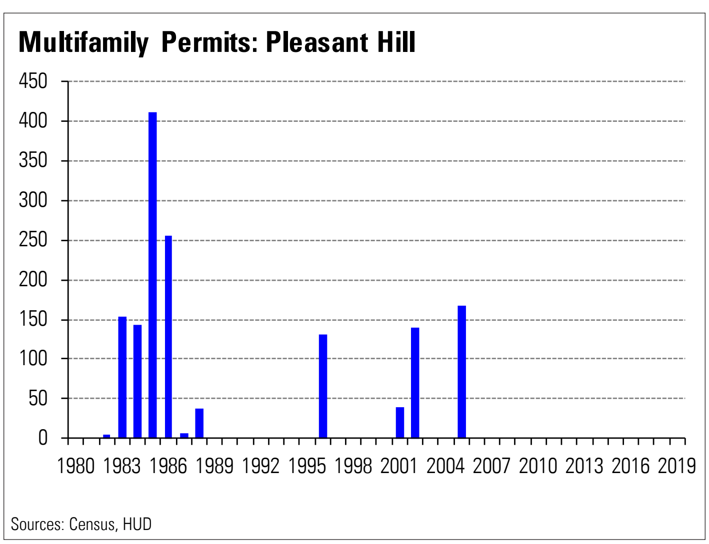
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Oakland
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Pinole
160
140
120
100
80
60
40
20
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Pleasant Hill
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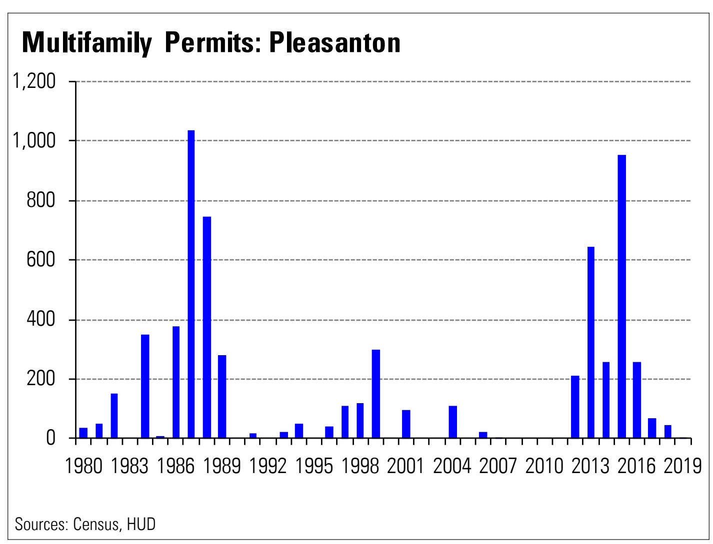
400
350
300
250
200
150
100
50
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Pleasanton
1,200
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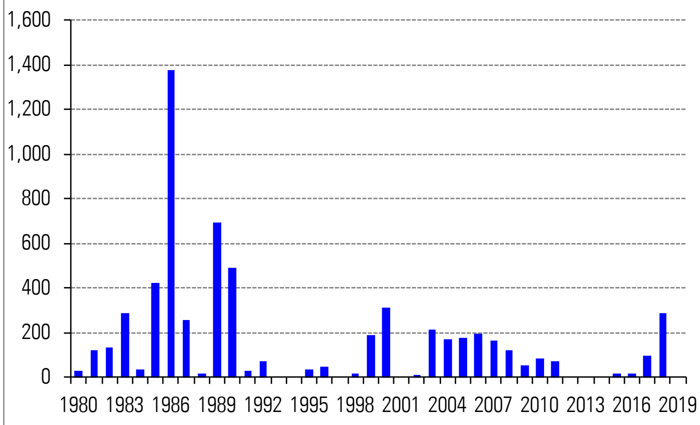
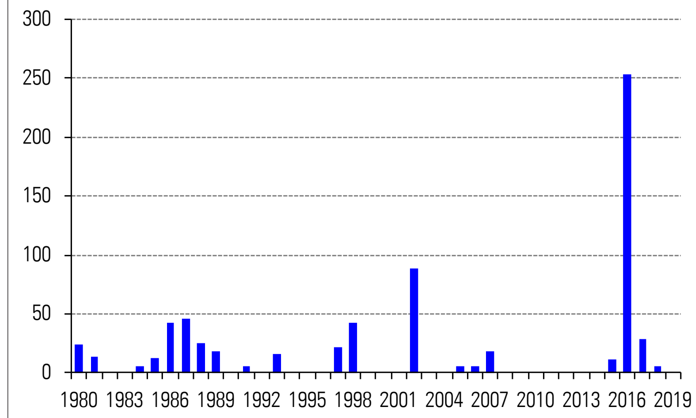
800
600
400
200
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD

Multifamily Permits: Richmond



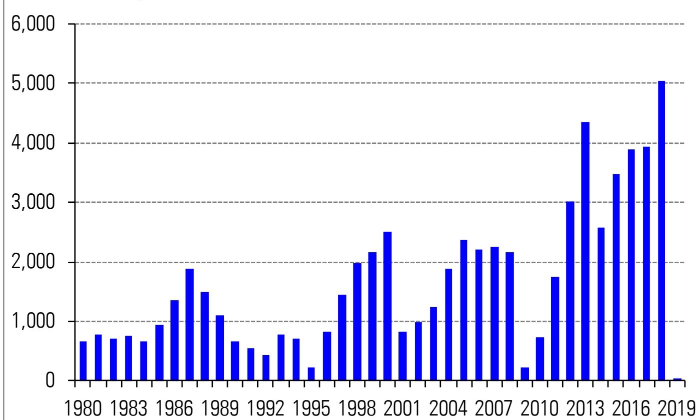
Sources: Census, HUD

Multifamily Permits: San Carlos



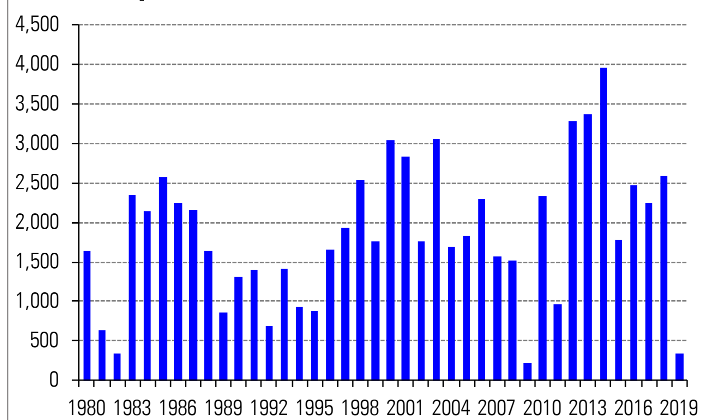
Sources: Census, HUD

Multifamily Permits: San Francisco



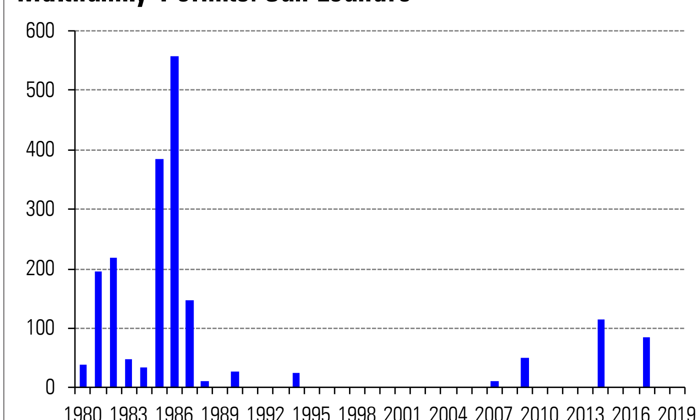
Sources: Census, HUD

Multifamily Permits: San Jose



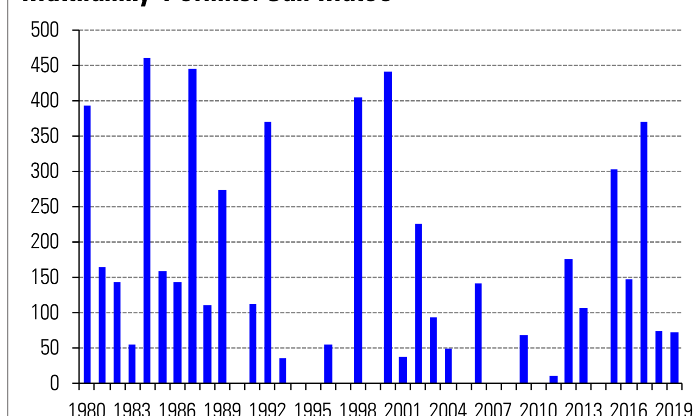
Sources: Census, HUD

Multifamily Permits: San Leandro

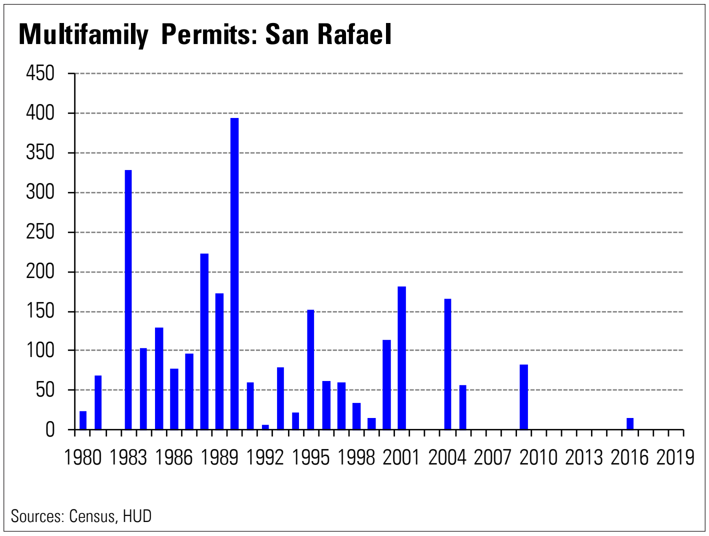


Sources: Census, HUD

Multifamily Permits: San Mateo



Sources: Census, HUD


Multifamily Permits: San Rafael
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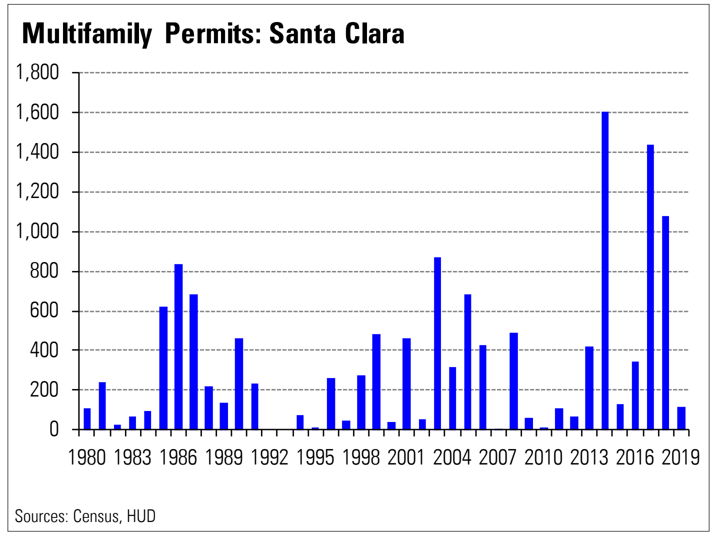
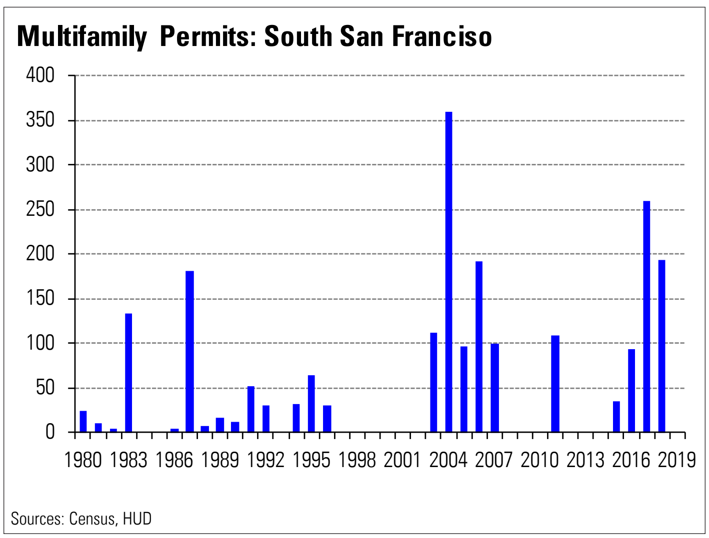
400
350
300
250
200
150
100
50
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Santa Clara
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: South San Francisco
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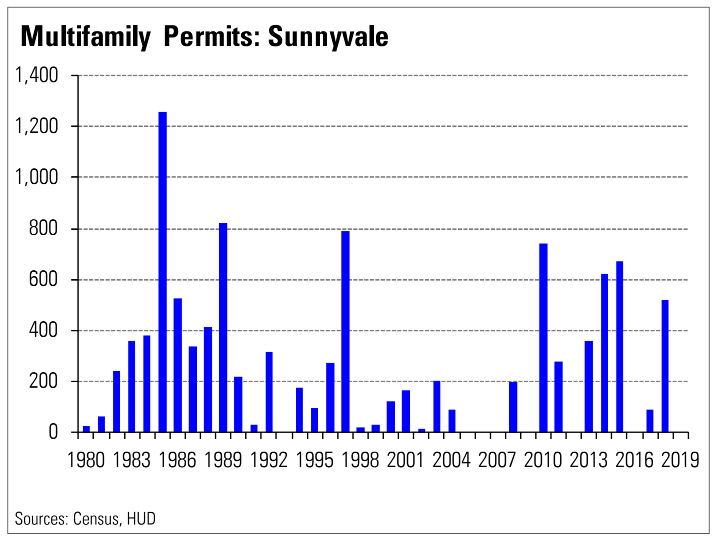
350
300
250
200
150
100
50
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD


Multifamily Permits: Sunnyvale
1,400
1,200
1,000
800
600
400
200
0
1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019
Sources: Census, HUD

Appendix B

Fixed Effects on Multifamily Stock Growth

Place	Fixed Effect Coeff 1995 C-H Cut	Fixed Effect Coeff 1999 C-H Cut	Difference
Alameda	0.019	0.020	0.001
Antioch	0.014	0.015	0.001
Belmont	0.015	0.016	0.001
Berkeley	**0.027**	**0.029**	**0.002**
Concord	0.012	0.013	0.001
Dublin	0.035	0.036	0.001
Fremont	0.012	0.012	0.001
Gilroy	0.016	0.017	0.001
Half Moon Bay	0.008	0.008	0.001
Hayward	**0.014**	**0.013**	**-0.001**
Hercules	0.026	0.026	0.001
Larkspur	0.011	0.012	0.001
Livermore	0.013	0.014	0.001
Los Gatos	**0.006**	**0.007**	**0.001**
Menlo Park	0.008	0.009	0.001
Mill Valley	0.007	0.008	0.001
Milpitas	0.021	0.022	0.001
Morgan Hill	0.013	0.014	0.001
Mountain View	0.020	0.022	0.002
Newark	0.011	0.011	0.001
Oakland	**0.018**	**0.020**	**0.002**
Pinole	0.010	0.011	0.001
Pleasant Hill	0.015	0.016	0.001
Pleasanton	0.017	0.018	0.001
Richmond	0.013	0.013	0.000
San Carlos	0.014	0.015	0.001
San Francisco	**0.048**	**0.052**	**0.005**
San Jose	**0.016**	**0.018**	**0.002**
San Leandro	0.017	0.018	0.001
San Mateo	0.024	0.026	0.002
San Rafael	0.011	0.012	0.001
Santa Clara	0.023	0.024	0.001
South San Francisco	0.020	0.022	0.002
Sunnyvale	0.021	0.022	0.001

Note: All fixed effect coefficients are highly statistically significant. Bold represents rent-controlled places.

Fixed Effects on Total Stock Growth

Place	Fixed Effect Coeff 1995 C-H Cut	Fixed Effect Coeff 1999 C-H Cut	Difference
Alameda	0.071	0.074	0.003
Antioch	0.063	0.065	0.002
Belmont	0.056	0.058	0.003
Berkeley	**0.096**	**0.100**	**0.004**
Concord	0.043	0.045	0.002
Dublin	0.086	0.088	0.002
Fremont	0.037	0.039	0.002
Gilroy	0.061	0.063	0.002
Half Moon Bay	0.030	0.030	0.001
Hayward	**0.036**	**0.037**	**0.001**
Hercules	0.077	0.079	0.002
Larkspur	0.039	0.041	0.002
Livermore	0.051	0.053	0.002
Los Gatos	**0.029**	**0.031**	**0.002**
Menlo Park	0.032	0.033	0.002
Mill Valley	0.030	0.032	0.002
Milpitas	0.061	0.063	0.002
Morgan Hill	0.055	0.056	0.002
Mountain View	0.065	0.068	0.003
Newark	0.037	0.039	0.002
Oakland	**0.066**	**0.069**	**0.003**
Pinole	0.041	0.043	0.002
Pleasant Hill	0.053	0.055	0.003
Pleasanton	0.060	0.062	0.002
Richmond	0.039	0.040	0.002
San Carlos	0.050	0.052	0.002
San Francisco	**0.156**	**0.164**	**0.008**
San Jose	**0.054**	**0.058**	**0.004**
San Leandro	0.060	0.063	0.003
San Mateo	0.077	0.081	0.004
San Rafael	0.036	0.038	0.002
Santa Clara	0.065	0.068	0.003
South San Francisco	0.068	0.071	0.003
Sunnyvale	0.065	0.068	0.003

Note: All fixed effect coefficients are highly statistically significant. Bold represents rent-controlled places.

End Notes

[1] Examples include: Teitz, Michael. Strict rent Control in Small California Cities. Fisher Center for Real estate and Urban Economics. 1994. Retrieved from: https://escholarship.org/uc/item/28m537tf

Edward Glaeser and Erzo Luttmer. The Misallocation of Housing under Rent Control. 2003. The American Economic Review. Retrieved from: https://www.nber.org/papers/w6220

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[2] Glaeser, 2003.

[3] Ibid.

[4] Diamond, 2019.

[5] Ibid.

[6] An Analysis of Rent Control Ordinances in California. 2016. Beacon Economics. Retrieved from: https://caanet.org/app/uploads/2016/02/Jan2016_Rent_Control_Study.pdf.

[7] Lambie-Hanson, Lauren. Effects of Vacancy Decontrol on Berkeley Rental Housing. 2008. UC Berkeley. Retrieved from: https://escholarship.org/uc/item/9868w5pn#author

[8] Diamond, 2019.

[9] Sims, David. Out of Control: What Can We Learn From the End of Massachusetts Rent Control? 2006. Journal of Urban Economics. Retrieved from: https://www.researchgate.net/

[10] Planning and Development Department at the City of Berkeley. Rent Control in the City of Berkeley, 1978 to 1994: A Background Report, City of Berkeley. May 1998. Retrieved from: https://www.cityofberkeley.info/Rent_Stabilization_Board/Home/Ordinance__Rent_Stabilization_and_Eviction_for_Good_Cause.aspx

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[12] Glaeser, Edward L. Does Rent Control Reduce Segregation? 2002. Harvard Institute of Economic Research. Retrieved from: https://scholar.harvard.edu/glaeser/publications/does-rent-control-reduce-segregation

[13] Ibid.

[14] Rosen, 2018.

[15] Smith, Lawrence. An Economic Assessment of Rent Controls: The Ontario Experience. 1988. The Journal of Real Estate Finance and Economics. Retrieved from: https://www.researchgate.net/journal/0895-5638_The_Journal_of_Real_Estate_Finance_and_Economics

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