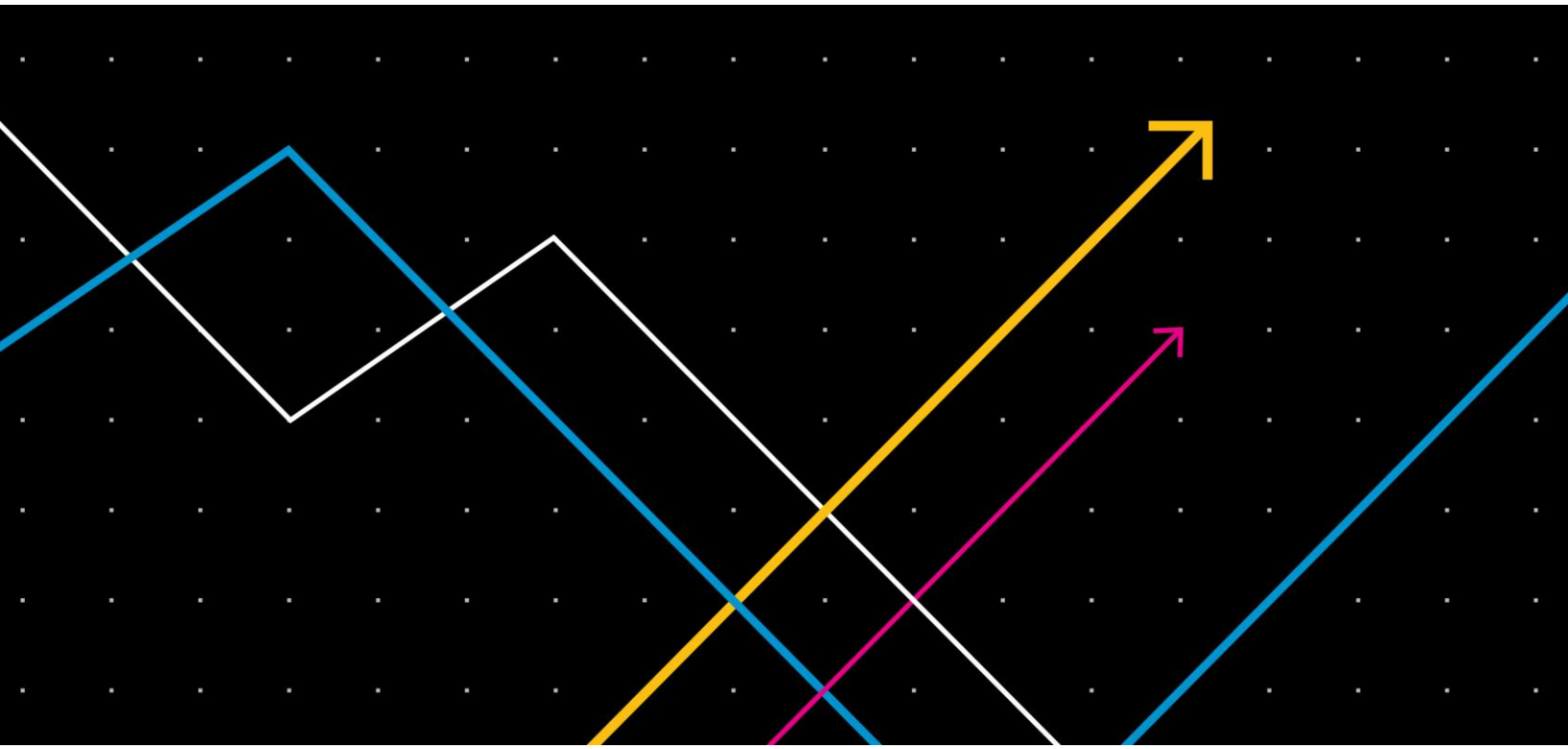

RESEARCH REPORT

Housing and Land-Use Implications of Split-Roll Property Tax Reform in California

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1. Introduction

In November 2020, California voters will vote on Proposition 15, also known as the California Schools and Local Communities Funding Act of 2020. Proposition 15 is a statewide ballot measure which, if adopted, would change the way local governments assess property values for calculating and collecting property taxes. Since the passage of Proposition 13 in 1978, tax rates and tax increases in California have been subject to strict limits, and property assessments have been tied to property purchase prices instead of current market value. Under Proposition 13, commercial, industrial, and residential properties are treated identically. If passed, Proposition 15 would require California jurisdictions to reassess most commercial and industrial properties at current market value at least every three years, while residential property would continue to be taxed under the rules of Proposition 13. Proposition 15 is often referred to as the "split-roll" ballot measure because it would split the assessment rolls for commercial and industrial properties from residential properties.

Proponents of Proposition 15 argue that it would create a fairer tax system, narrow state and local budget shortfalls, and raise sorely needed revenue for schools and services. The California Legislative Analyst's Office estimates that the split-roll assessment scheme under Proposition 15 will produce a gross property tax revenue increase of between $7.5 billion and $12 billion annually.[1] Proponents argue that this revenue could improve the state's public services (e.g., education and infrastructure), which evidence suggests require an infusion of resources to meet the growing needs of California's residents and businesses (Gordon, Auxier, and Rueben 2020; Rueben, Auxier, and Gordon 2020).[2] In addition, proponents argue that Proposition 15 would close loopholes for businesses and corporations under Proposition 13, create a more balanced revenue system, and mitigate local fiscal challenges (Auxier, Gordon, and Rueben 2020).[3]

Opponents argue that Proposition 15 will make California less attractive to new businesses, increase costs for existing businesses, stunt job growth, and hurt California's economy (BRG 2020).[4] Faced with higher property taxes, commercial property owners may also pass the increased costs onto their tenants, and small businesses may be unable to absorb these rent increases (California Chamber of Commerce 2020).[5] More recently, some analysts have forecast that the COVID-19 pandemic and recession, in addition to shifts in the state's economy, will depress commercial property values in the years ahead, and they suggest that proponents' estimates of revenue gains are overblown.[6]

The debate over Proposition 15 must be considered against the backdrop of an unprecedented housing shortage in California and rising housing costs that are hitting low-income Californians the

hardest (Kimberlin 2019).[7] Both proponents and opponents of Proposition 15 cite the state's housing affordability crisis as supporting their position, but they reach different conclusions about the effects that split-roll reforms are likely to have. Proponents argue that increased property tax revenue from Proposition 15 could support housing development, either directly through housing subsidies or indirectly by supporting infrastructure and services.[8] They also suggest that taxing vacant or underutilized commercial and industrial properties based on current market value will encourage owners to convert the land to residential use to take advantage of lower effective tax rates over time (Coffill et al. 2020).[9] Conversely, opponents argue that split roll will encourage local governments to rezone residential land for commercial or industrial use to capture more property tax revenue because under Proposition 15, commercial and industrial properties would be reassessed with greater frequency and could generate more tax revenue over time (BRG 2020; Frates and Shires 2012).[10]

In this report, we examine the proposed split-roll property tax reforms in the context of California's housing crisis, defined by a shortage of housing development and a lack of access to affordable housing. We develop a model to test the claim often cited by opponents of Proposition 15 that converting to a split-roll assessment regime will increase incentives to local governments to rezone residential properties for commercial and industrial use to capture additional tax revenue. We combine property records, land-use and zoning data, and tax property assessment rolls for four California cities to estimate the financial incentives for municipalities to rezone from residential use to commercial or industrial use. We also look at the incentives for private owners of vacant or underutilized commercial and industrial properties to convert those properties to residential use, where already permitted, to reduce tax liability over time. We then compare the relative strength of public and private incentives and discuss how they might influence future land-use and residential development if the split-roll proposal is passed.

Contrary to the claims of opponents of Proposition 15, we find that split-roll tax reforms are unlikely to substantially alter municipal zoning incentives or suppress housing supply in California. Across the cities we studied, few parcels are eligible for conversion from residential use to industrial or commercial use under existing land-use and zoning codes. For parcels that are plausibly at risk of conversion, the incentives for municipalities to rezone are weak because municipalities keep only a small portion of the incremental taxes raised on properties within their borders. On the other hand, split roll would create strong incentives for private owners of vacant and underutilized commercial and industrial properties to convert these properties to residential use, where allowed, to avoid increased tax liability. On balance, we find that split-roll tax reforms are more likely to increase California's

housing supply than constrain it. But we also find that split roll is not likely to solve California's housing shortage or affordability challenges without additional policies and reforms.

In the next chapter, we provide more background on Proposition 13 and the proposed split-roll reforms under Proposition 15 and discuss what the research literature tells us about how variations in property tax regimes influence land-use regulation and development decisions. In chapter 3, we describe our research questions, empirical methods, and data. In chapter 4, we share our findings across four case study cities and with various assumptions about market growth and property appreciation rates. Chapter 5 concludes with the implications of our analysis for property tax and housing policies in California.

2. Background

Proposition 13 and Split Roll

In 1978, Californians passed Proposition 13, which overhauled the state's property tax system. Proposition 13 limits the property tax rate to 1 percent of a property's assessed value, and it limits increases in assessed value to the lower of inflation or 2 percent per year, with the initial assessment set as either the property's value in 1975 or the most recent purchase price (Sexton, Sheffrin, and O'Sullivan 1999).[11]

In its first year, Proposition 13 led to a 60 percent drop in local property tax revenues because of the rate limit (McCubbins and McCubbins 2010; Taylor 2016). Since then, the law has further constrained local revenue by limiting increases in property assessments (Sexton. Sheffrin, and O'Sullivan 1999; Taylor 2016). As property values in California have increased, the relative tax burden has declined for longtime property owners and has increased for new homebuyers and commercial owners (O'Sullivan et al. 1995; Taylor 2016). By providing an implicit tax break to homeowners living in the same house for a long time, Proposition 13 also reduces residential mobility, which may lead to several negative social effects, such as suboptimal housing consumption and inefficient labor market outcomes (Ferriera 2009; Imrohoroğlu, Matoba, and Tüzel 2018; Sexton 2008; Wasi and White 2005).

Proposition 13 also created a system for determining how property tax revenue is allocated. Property taxes are collected at the county level and then apportioned among the county government, school districts, municipalities, and other local entities (Elledge 2006; Sexton, Sheffrin, and O'Sullivan 1999).[12] The apportionment process and formulas are complicated, vary by locality based in part on the services they provide, and have changed multiple times since the passage of Proposition 13 through voter referenda, court decisions, and new legislation (Schwartz 1997; Sexton, Sheffrin, and O'Sullivan 1999).[13] Statewide, about 17 percent of property tax revenue goes to cities, with 34 percent going to schools and 27 percent going to counties.[14] Yet, municipal allocations vary greatly as counties and cities have different responsibilities and provide different levels of service throughout the state. In 2019, municipalities in California received between 1 and 35 percent of the property tax revenue generated within their boundaries.[15]

In response to the constraints of Proposition 13, local governments became more reliant on state aid and other revenue sources, such as hotel, sales, and utility taxes and user charges and fees (Sexton,

Sheffrin, and O'Sullivan 1999; Taylor 2016).[16] Between 1978 and 2015, inflation-adjusted property tax revenue doubled, while hotel, sales, and utility taxes increased more than 600 percent (Taylor 2016). In 2017, only 14 percent of state and local revenue in California came from property taxes, significantly lower than the nationwide average rate of 17 percent (Auxier, Gordon, and Rueben 2020).

If adopted, Proposition 15 would amend California's constitution to change the way commercial and industrial properties are taxed under Proposition 13. Proposition 15 would require most commercial and industrial properties to be taxed based on current market value, while residential and agricultural properties would continue to be taxed under the rules of Proposition 13.[17] If Proposition 15 were to pass, the first market-rate assessments are not set to take place until fiscal year 2023, and the measure exempts properties owned by individuals or businesses with less than $3 million in total California property holding (Auxier, Gordon, and Rueben 2020).

The proposed measure also creates a distribution formula by which new revenue from the revised tax on commercial and industrial properties would first be distributed to the state to offset losses from increased tax deductions and to counties to cover the costs of implementing the measure. Of the remaining funds, approximately 60 percent of the revenue statewide would be distributed to local governments and special districts, and 40 percent would be distributed to school districts and community colleges.[18]

Variation in Property Tax Assessment and Classification Systems

Property tax systems vary across states. States generally assess properties at regular intervals to determine their taxable values and establish their owners' tax liabilities based on property tax rates and exemptions. Some states limit the amount that property taxes can increase every year, either by limiting tax rate increases or total property tax collections or by limiting yields. Forty-six states and the District of Columbia have adopted some form of property tax limitation, but the types vary widely.[19]

Proposition 15 proposes to change property taxes in California from a uniform system to a classified system. Classification allows states to tax different types of properties based on use or ownership (e.g., residential or commercial) at different effective tax rates (box 1). A property tax classification system with only two classes is sometimes referred to as a split roll (Auxier, Gordon, and Rueben 2020; Lee and Wheaton 2010). State tax systems vary in how they classify properties and how

they tax those classes. Twenty-five states and the District of Columbia have enacted some form of property tax classification system (Lee and Wheaton 2010).

BOX 1

Definitions

- **classification.** States and localities often tax different properties at different effective rates based on their use (e.g., residential, commercial, industrial, agricultural). This is often referred to as property classification.[a]
- **classification assessment schedules.** Property tax systems can also assess different classes of property at different frequencies. For example, a state might assess residential property only upon sale of the property and assess commercial property every two years.
- **classification rates.** In some property tax systems, classification is used to determine the rate (or share of the market value) at which properties are taxed.[b]
- **classification ratios.** In other property tax systems, different classes of property are assessed at different proportions of the true market value, but properties of all classifications are charged at the same rate.[c]
- **effective tax rate.** The actual rate of tax liability as a share of market value. For example, if a home worth $100,000 pays a $2,000 tax bill, the effective tax rate is 2 percent.
- **split roll.** A property tax system with only two classifications (e.g., residential versus commercial) is often called a split-roll property tax.[d]

[a] Richard C. Auxier, Tracy Gordon, and Kim Rueben, "California's State and Local Revenue System" (Washington, DC: Urban Institute, 2020).
[b] Nai Jia Lee and William Wheaton, "Property Taxes under 'Classification': Why Do Firms Pay More?" *SSRN Electronic Journal* (2010).
[c] Lee and Wheaton, "Property Taxes."
[d] Auxier, Gordon, and Rueben, "California's State and Local Revenue System."

State Tax Limits and Zoning Incentives

"Fiscal zoning" refers to the tendency of local governments make land-use planning and development decisions that increase revenues and reduce demand for public services (Chapple 2018; Fischel 2000). In general, state property tax limitations like Proposition 13 can exacerbate fiscal zoning because property taxes are capped and, in states like California, because they are allocated using a formula. This

can increase pressure on local governments to make land-use decisions strategically to balance municipal budgets (Elmer, Thorne-Lyman, and Belzer 2006; Thomas 2006).

The limitations imposed under Proposition 13 have led municipalities in California to pursue alternative revenue sources (Hill 2018). Limiting property taxes may force cities to compete to attract businesses that can generate sales tax revenues, a process sometimes referred to as "chasing the sales tax" (Hill 2018; Schwartz 1997). Some empirical evidence suggests these pressures exist in California, and local policymakers act on them. According to survey data, California city managers prefer land uses that generate sales taxes, like commercial development, over other land uses (Lewis and Barbour 1999). Jurisdictions in which property taxes make up a larger share of local revenue have been more likely to convert land from nontaxable uses to taxable uses (Chapple 2018).

But some research refutes the claim that localities in California prioritize revenue generation in their land-use decisions. A report by the California Legislative Analyst's Office (LAO) found little evidence that Proposition 13 affects local government land-use decisions (Taylor 2016). The LAO examined rezoning decisions and building permits and found that, although cities that relied more on sales taxes were slightly more likely to rezone more land for retail uses than comparison cities, fiscal incentives have little or no effect on the amount of land rezoned for housing. In fact, cities with lower property tax shares permitted more housing construction than those with higher shares (Taylor 2016).

Proposition 13 may also indirectly affect local land-use decisions (Hill 2018). Schwartz (1997) argues that Proposition 13 limits cities' ability to fund infrastructure to support new housing. In addition, Proposition 13 may encourage local governments to rely on impact fees and other charges to residential developers that make it more expensive to build new housing, unless they can pass along those costs to consumers (Dresch and Sheffrin 1997; Hill 2018; Schwartz 1997).

Switching from a uniform property tax system to a split-roll classification system may affect land-use decisions in California, though the direction and strength of these effects remain unclear. Some research suggests that split roll can help balance municipal budgets between property, income, sales, and other tax revenue (Auxier, Gordon, and Rueben 2020; Sheffrin 2009). With more balanced budgets, localities might rely less on sales taxes and redistribute resources to infrastructure and housing (Benner and Guista 2018; Chapple 2018; Hill 2018; Paulsen 2014; Schwartz 1997). Localities also might not have to chase sales taxes if they had more reliable property tax revenue, which could ease the fiscal zoning pressures described above (Gallagher 2016; Hill 2018; Sexton, Sheffrin, and O'Sullivan 1999). On the other hand, some economic analysts argue that split roll will increase the incentive for localities

to zone for commercial and industrial uses to capture the additional property tax revenue from higher assessments on commercial and industrial land and development (BRG 2020; Coffill et al. 2020).

Property Taxes and Development Incentives

Past research provides mixed and inconclusive evidence about the effects of local taxes on private property owners' investment and development decisions (Dye, McGuire, and Merriman 2001; Swenson 2016; Walker and Greenstreet 1991; Wu 2010). There are competing theoretical frameworks for analyzing property taxes, with different assumptions about whose incentives are affected by local tax policy (Youngman 2016; Zodrow 2001). Some evidence suggests that, all else equal, lower property taxes are associated with higher levels of residential investment (Lutz 2015; Wassmer 1993). This effect is difficult to measure, however, because local tax revenues fund local amenities, which make a place more desirable to residents and increase demand for housing.

For current property owners, Proposition 13 discourages sales and has potentially offsetting, positive effects on development and investment. Proposition 13 also reduces the costs of owning and holding vacant land and therefore may discourage development and reduce investment (Taylor 2016).

Proposition 15 might affect owner incentives in two ways. First, it effectively removes the limitations of Proposition 13 for commercial properties. Because we do not know whether Proposition 13 encourages or discourages investment, we do not know the effects of this partial repeal.

Second, Proposition 15 would increase operating costs of commercial or industrial properties relative to residential properties, which will create an incentive, at least on the margin, for owners to use land for residential use. Crucially, however, the effect of this incentive is limited by land-use regulations that may permit only residential use or commercial or industrial use (Youngman 2016).

Perceived Effects of Split Roll on Housing Supply in California

Opponents of Proposition 15 argue that split roll could decrease housing production. First, it could increase incentives for localities to zone for commercial and industrial uses to capture the additional property tax revenue from higher assessments on commercial and industrial land and development (BRG 2020; Frates and Shires 2012).[20] Second, in zones where multiple uses are permitted,

municipalities may be more likely to scrutinize or delay residential development and more likely to expedite and entitle commercial and industrial uses to recoup the additional revenue that these uses generate over time.

On the other hand, proponents of Proposition 15 argue that split roll could increase housing production. First, it could increase incentives to private owners of vacant or underutilized commercial or industrial land to develop or convert that land for multifamily housing to reduce tax liability (Coffill et al. 2020).[21] Second, it could increase municipal revenue that could be used to support housing development, either directly through housing subsidies or indirectly by supporting infrastructure and services.[22]

In this report, we examine only the first arguments for and against split roll from a housing perspective: we estimate and compare municipal incentives to rezone for commercial or industrial uses with private incentives to redevelop vacant or underutilized land for housing. We focus on these arguments because they are measurable using available data on zoning, land uses, property values, and taxes. We also focus on the fiscal zoning issues so often cited by opponents of Proposition 15 because even though they are frequently raised, they have not been empirically tested.

The second arguments for and against split roll from a housing perspective focus on municipal decisions regarding entitling new development and allocating new revenue. These are primarily political decisions, and they are not readily measurable. But as we discuss in our findings, the strength of incentives for cities to rezone and owners to redevelop are likely to influence the politics of land use and development in California cities.

3. Methods

Research Questions

In this research, we attempt to identify Proposition 15's net effects on new residential development in California cities. There are different incentives for municipalities and for private owners that pull in different directions. Proposition 15 requires jurisdictions to reassess commercial and industrial properties at market value but keep the assessment structure for residential (including multifamily) properties intact based on original cost. As such, municipalities may have an incentive to prioritize commercial or industrial properties over residential development.

At the same time, there are countervailing incentives for owners of commercial and industrial properties to convert these properties to multifamily housing where zoning rules allow it. Because multifamily and commercial development are often alternative uses of land zoned for commercial or mixed use, on the margin, private owners and developers may prefer to develop or redevelop land as multifamily housing to avoid the increased tax liability associated with the split-roll classification scheme.

We attempt to estimate the relative strengths of these offsetting incentive structures and attempt to identify which incentive structure is dominant. Specifically, we aim to answer the following questions:

1. Will Proposition 15 create incentives for California cities to rezone residential land for commercial and industrial development? If so, what is the magnitude of these public incentives?
2. Will Proposition 15 create incentives for owners of vacant or underutilized commercial or industrial land to develop or convert that land for residential use? If so, what is the magnitude of these private incentives?
3. On balance, and without additional subsidies, will split roll increase or decrease housing development?

To answer these questions, we used a mixed-methods approach that consists of both quantitative and qualitative analysis.

Selecting Case Study Cities

Our quantitative analysis involved combining information on property taxes, assessed values, and zoning codes. Because zoning codes are not standardized across jurisdictions and had to be manually reviewed and then coded and matched to property-level data, we selected four case study cities, intended to be representative of different community types.

To select cities for analysis, we used property records data from First American DataTree. These data are collected at the county level and contain detailed information on properties, such as current land use, zoning designation, assessed value, ownership, and year built. In some cities, we supplemented these data with county land-use definitions and zoning information; specifically, what uses were permitted in which zones.

In selecting cities, we considered all census-designated places with at least 30,000 housing units, as smaller jurisdictions would not yield a large enough number of observations for our model. We then evaluated cities on a set of criteria to determine whether data quality in our datasets was sufficiently high to conduct the analysis. Specifically, the jurisdictions had to have a low rate of missing values for key variables, at least 2.5 percent of parcels had to be vacant, and they had to have a publicly available zoning map and code. Of the 92 jurisdictions in the state with at least 30,000 housing units, 18 cities fit all these criteria.

After screening for data quality, we selected cities that represent the diversity of housing markets and regions within California. We evaluated cities based on their median home value, population, region (Bay Area, Southern California, and Central Valley), and position within a regional housing market (core cities versus suburban or satellite cities). Because the strength of municipal incentives to rezone depends on how much property tax revenue a jurisdiction will receive from a given parcel, we also calculated apportionment schedules based on data from the California State Controller's Office. We selected cities that include a range of implicit tax rates both currently and under Proposition 15.

Our final selections were Los Angeles, Fresno, Berkeley, and Chula Vista. For each, we found low rates of missing data and publicly available zoning maps and codes. They also represent different housing market conditions and apportionment formulas (table 3.1).

TABLE 3.1

Characteristics of Selected Cities

City	County	Population	Median home value	Current (2019) implicit tax rate
Los Angeles	Los Angeles	3,959,657	$599,700	0.265%
Fresno	Fresno	522,277	$224,600	0.232%
Berkeley	Alameda	120,926	$938,400	0.382%
Chula Vista	San Diego	266,468	$465,000	0.117%

Source: Population and median home values come from the 2018 American Community Survey.
Notes: The implicit tax rate is the city's share of the 1 percent property tax plus local levies and fees. We calculated the implicit tax rate using data from the California State Controller's Office. For more information on calculating apportionment formulas and implicit tax rates, see appendix A.

Model Description

For each case study city, we estimated the strength of municipal incentives to rezone properties from residential use to commercial or industrial use. To do this, we developed a definition for "at-risk properties" that could be rezoned for commercial or industrial use. We then estimated the aggregate value of these properties and determined how much additional revenue the jurisdiction would receive from the increase in tax revenue in the short and long term applying the municipality's apportionment ratio.

We then compared these municipal incentives to rezone (at-risk properties) with incentives for owners of vacant or underutilized commercial or industrial properties, which we call "opportunity properties," to convert these properties to residential use. We estimated the aggregate value of the incentives to owners to convert properties in the short term caused by an assessment hike and in the long term based on the increased tax liability for commercial or industrial use. For our analyses of at-risk and opportunity properties, we excluded properties with a current estimated value of at least $3 million to account for the exemption in Proposition 15 for lower-value properties and smaller property owners.

We unite the two analyses by quantifying, for each municipality, how the public incentives to convert from residential use to commercial or industrial use compares with private incentives to do the opposite.

Identifying At-Risk Properties

Using property records data, we developed a set of criteria and evaluated which parcels are most likely to be rezoned for commercial or industrial use. Whether the jurisdiction would rezone for commercial

or industrial use is based on the jurisdiction's zoning code. In Los Angeles and Berkeley, multifamily housing is allowed in all commercial districts but not in industrial districts, so the city would have to rezone to an industrial use to block residential development. In Fresno and Chula Vista, some commercial districts do not allow any residential development by right.

For a parcel to be considered an at-risk property, it must meet all the following criteria:

1. **Land use.** Either vacant *or* improved land with an aging residential structure. "Aging" is defined as multifamily or single-family residential structures in the bottom 25th percentile of age by land use in each jurisdiction.
2. **Zoning.** Land is currently zoned for multifamily residential use. Multifamily zoning is defined as a zone that allows lots to have more than one unit.
3. **Surrounding land use.** At least 2 percent of surrounding parcels, defined as parcels within 0.25 miles, must have a commercial or industrial land use. For Los Angeles and Berkeley, we use only industrial land use, as multifamily housing is permitted in all commercial districts. In Fresno and Chula Vista, we use all commercial uses, which includes industrial use.
4. **Estimated market value.** Properties must have an estimated current market value of at least $3 million to account for exclusions under Proposition 15. For the methodology on predicting market values, see appendix A.

We limited at-risk properties to those in zones that allow multifamily development and those near existing commercial or industrial uses because it is highly unlikely that a municipality would rezone areas used solely for single-family homes and far removed from other commercial or industrial uses. A municipality would face considerable community resistance to rezoning these parcels, and developers would be deterred by a lack of amenities for workers in any future commercial and industrial development.

Quantifying the Public Incentives for At-Risk Properties

For each at-risk property, we estimate the value of the parcel if it were improved and brought up to its current market value. To do this, we used the average of a log-linear model on sales price by lot size and price per acre of recent sales in the area. For more details on this model, see appendix A. This estimation, as well as the estimation of the value of "opportunity properties," does not account for the specific characteristics of each property. Some properties may have characteristics that make it uneconomically expensive to be improved. In estimating both short- and long-term incentives for at-risk

properties, we assumed that every eligible residential property would be rezoned and redeveloped as commercial or industrial use in the first year Proposition 15 goes into effect.

The jurisdiction's short-term incentive is defined as the gap between the revenue the jurisdiction receives from the current vacant at-risk properties and the revenue the city would receive on the market value of the vacant parcels. Because Proposition 15 classifies improved properties based on their current use, there is no short-term municipal incentive to rezone aging residential structures. Additional revenue would be collected only if and when the property is redeveloped and converted to commercial use. Because vacant lots are classified based on zoning, however, cities could theoretically increase revenue immediately by rezoning. Revenue is determined through apportionment formulas, with any increase in value subject to the split-roll apportionment formula.

The jurisdiction's long-term incentive is the wedge in property tax revenue over time that comes from commercial properties being assessed at their market value (as opposed to residential properties, which are limited to a 2 percent increase in assessed value). We estimate the new revenue available to cities from aggressive rezoning by assuming that every at-risk property is redeveloped and reassessed within a year of Proposition 15 taking effect and that ownership is fixed from that point forward.

We were unable to estimate the revenue from at-risk properties that remain residential and are redeveloped but not sold. Under Proposition 15, the new residential structure would be reassessed when built, but the land's value would continue to be assessed based on the sale price. We were unable to separately estimate the value of land and improvements. Instead, we assumed that redeveloped residential properties are reassessed at full market value when they are redeveloped—in effect, we assumed that all redeveloped properties are sold.

The assumption that every at-risk property is redeveloped led us to overestimate municipal incentives. In contrast, the assumption that redeveloped residential property is reassessed at full market value when redevelopment occurs led us to underestimate municipal incentives. Because most at-risk properties will not be developed in the first years after Proposition 15, and a large portion of redeveloped properties will be sold shortly before or after redevelopment, our estimate of long-run municipal incentives can be thought of as an upper bound.

Results are reported as revenue to the city from at-risk parcels, and the short- and long-term results are reported separately. We also show these results in context, as a share of the jurisdictions' total property tax revenue in 2019.

Identifying Opportunity Properties

We developed an additional set of criteria to determine which properties are viable candidates to be converted to residential use by private owners.

For a parcel to be considered an opportunity property, it must meet all the following criteria:

1. **Land use.** Either vacant *or* improved land with an aging commercial structure. "Aging" is defined as commercial structures in the bottom 50th percentile of age for commercial properties in each jurisdiction.
2. **Ownership.** Land must be privately owned (not owned by a government entity).
3. **Zoning.** Parcels must be zoned for both commercial and multifamily development.
4. **Estimated market value.** Properties must have an estimated current market value of at least $3 million to account for exclusions under Proposition 15. For the methodology on predicting market values, see appendix A.

Our criteria for identifying opportunity properties diverge from our criteria for at-risk properties to account for the differences between residential and commercial or industrial uses, as well as differences in how municipalities make rezoning decisions and how owners make decisions about improving their land. We allow a broader age range for opportunity properties because commercial and industrial buildings tend to have shorter life spans and are repurposed or redeveloped more quickly than residential properties (Aktas and Bilec 2012). We also limit our at-risk properties to those in zones that allow for multifamily residential development. Although we recognize that owners can lobby for rezoning, as discussed below, we were not able to model the effects of lobbying in this research, so we conservatively estimate the incentives only to redevelop for residential use where permitted. We also remove the proximity screen for opportunity properties because virtually all commercial and industrial properties in our four case study cities are within a quarter of a mile of a residential district, and by our definition, multifamily use must already be allowed under the existing zoning code to qualify as an opportunity property.

Quantifying Private Incentives for Opportunity Properties

We then measured the incentive for a private owner to convert a commercial or vacant property to residential use in terms of the decrease in tax liability caused by different tax treatment of residential

and commercial properties under Proposition 15. Residential properties can increase in their assessed value by only 2 percent a year, while commercial properties will be taxed at their market value.

For each opportunity parcel, we used the same valuation model for that of at-risk properties to determine market value, based on lot size and comparable sales in the area, and we assumed no market value differentiation between residential and commercial properties. We then measured the long-term tax liability of a commercial property, compared with a residential property of the same value. As with at-risk properties, we assumed that every opportunity property would be redeveloped as residential in the first year Proposition 15 goes into effect when calculating incentives.

We present these results both in terms of dollar savings and as taxes paid on a residential property as a share of taxes paid on a commercial property of the same value.

Again, we do not differentiate between reassessment of land and reassessment of improvements. For opportunity properties, we assumed that owners cannot convert from commercial or industrial use to residential use before the initial reassessment called for in Proposition 15. If this assumption is incorrect, our estimates of owner incentives could be thought of as lower-bound estimates, but California has a cumbersome approval process for new development, including an environmental review, which makes a quick approval unlikely.

Appreciation Rates

To determine the long-term effects of Proposition 15, we made assumptions for low, medium, and high rates of annual commercial price appreciation. Our assumptions are derived from the Moody's Analytics Commercial Property Price Indices. For a low estimate, we used 2.0 percent. For a medium estimate, we used the annual price appreciation from 2002 to the present, 3.5 percent. For a high-growth scenario, we used the annual price appreciation from 2009, which was near the lowest point following the financial crisis, to 2019, which was 5.7 percent.

Qualitative Analysis

After developing a preliminary model, we sought the advice of experts and stakeholders in California to evaluate our assumptions and preliminary model. We conducted these interviews to understand how core stakeholder groups think about how the proposed split-roll tax reforms will affect land-use decisions and housing production in California municipalities. Those four groups of interest were real

estate developers, affordable housing advocates, local planning and zoning officials, and experts in municipal finance.

We conducted four interviews in May and June 2020, focusing on statewide experts across real estate, affordable housing, zoning, and municipal finance. Because of the COVID-19 crisis and the additional burdens it placed on local governments, we limited the number of interviews and focused on interview candidates who could provide a statewide perspective.

We used insights from these interviews to refine our analytic model, including our definitions of at-risk and opportunity parcels and how we measure incentives for cities and developers. Through these interviews, we also gained a better sense of how our research findings could be used and applied in the current context and debate over split roll.

We shared preliminary research findings with a wider group of stakeholders in two case study cities. In July 2020, the research team hosted two workshops. The workshops featured an overview of findings for either Los Angeles or Fresno, followed by a group discussion about the research methods, findings, and implications. Workshop invitees included our interview candidates and a wider range of stakeholders in each city, such as developers, affordable housing advocates, or other interested parties.

4. Findings

We find that cities have few opportunities and little incentive to rezone residential land for commercial or industrial use. All four case study cities have few at-risk parcels, and any incentives to rezone to capture additional property tax revenue are reduced significantly by apportionment formulas. Even under our most aggressive estimates, we find that any incremental revenue to all four cities from rezoning will be a small share of the city's property tax revenue. In contrast, property owners have significant incentives to convert vacant or aging commercial or industrial properties to residential use, where allowed, to reduce their tax burdens.

Comparing At-Risk and Opportunity Properties

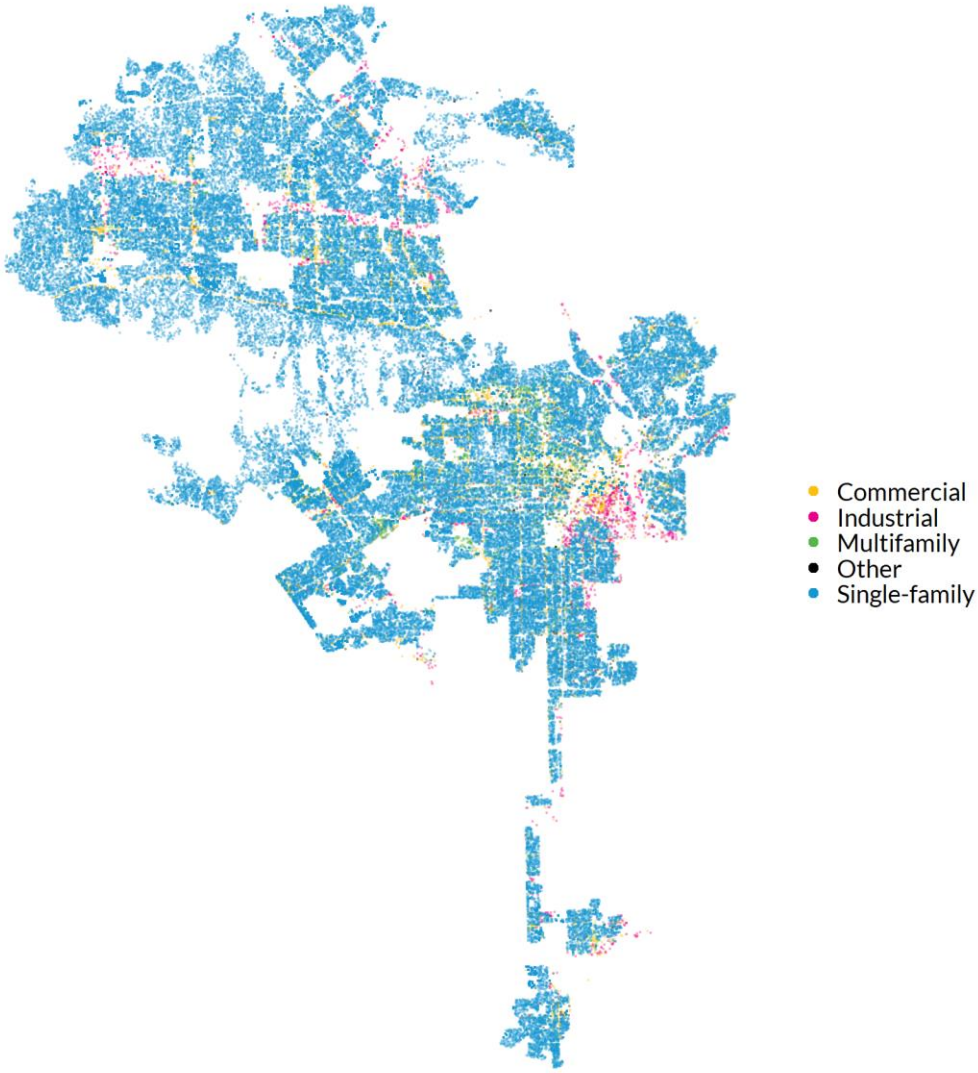
For all four cities, the number of at-risk vacant or aging residential properties that the city could rezone to allow for commercial or industrial use exclusively is much lower than the number of opportunity parcels that property owners could convert from commercial or industrial use to residential use. In both cases, the numbers are low.

Los Angeles provides an apt illustration. Consider first the at-risk properties. Of the city's more than 800,000 parcels, 177,420 are either aging residential structures or vacant land with residential zoning. But only 40,899 are within 0.25 miles of industrial parcels. Because multifamily housing is permitted in all commercial zones in Los Angeles, we look only at proximity to industrial properties in this analysis.

Figure 4.1 shows a parcel map of Los Angeles and illustrates the scarcity of at-risk properties. There are large areas of the city that are solely residential and far removed from both industrial and commercial uses.

FIGURE 4.1

Los Angeles Land-Use Map



Source: First American property records data.
Note: This map displays a random sample of 100,000 parcels in Los Angeles (the city has around 800,000 total parcels). Each point represents one parcel. "Other" contains agriculture, vacant, education, and all other land uses.

We also imposed the criterion that current zoning for at-risk parcels must allow for multifamily development, as it is unlikely that a property in an area zoned for single-family homes would be rezoned for commercial or industrial use. This reduces the number of parcels to 29,309. In addition, Proposition

15 does not require reassessments of properties valued below $3 million, and we estimate that 3,820 parcels are over the $3 million threshold and hence qualify as at risk. (We provide these figures for all four cities in appendix table B.1.)

For opportunity properties, we measure the incentives to convert from vacant or aging commercial or industrial use to residential use in zones that allow for both. In Los Angeles, 27,526 parcels have either aging commercial or industrial structures or vacant land that is zoned for commercial or industrial use. Of these, 26,356 parcels are privately owned, and 21,232 also allow for residential use. Adding the constraint that the property's estimated market value is at least $3 million reduces the number of at-risk properties to 8,104. (We provide these figures for all four cities in appendix table B.2.)

Table 4.1 shows the total number of opportunity and at-risk properties, broken down by those that are vacant and those with aging structures. Of the 3,830 at-risk parcels in Los Angeles, 151 are vacant and 3,679 are aging residential structures. Even if the city aggressively rezoned parcels to increase property tax revenue, Los Angeles could plausibly rezone only about half of 1 percent of the city's 800,000 parcels. At-risk parcels are even more scarce in Fresno (19), Chula Vista (5), and Berkeley (23).

Opportunity parcels far outnumber at-risk parcels in all the case study cities. In Los Angeles, there are more than twice as many opportunity parcels (8,104) than at-risk parcels. And the multiple is even higher in our other selected cities. In Fresno, there are more than 15 times more opportunity parcels (291) than at-risk parcels. Chula Vista has 91 opportunity parcels (18 times the number of at-risk properties), and Berkeley has 88 (4 times the number of at-risk parcels).

TABLE 4.1

Number of At-Risk and Opportunity Parcels in Case Study Cities

	At-Risk Parcels			Opportunity Parcels		
	Vacant	Aging residential	Total	Vacant	Aging commercial or industrial	Total
Los Angeles	151	3,679	3,830	176	7,928	8,104
Fresno	9	10	19	34	257	291
Chula Vista	1	4	5	11	80	91
Berkeley	2	21	23	20	68	88

Source: Authors' calculations from First American property records data, review of local zoning codes.

There are few parcels in each city where the municipal government could plausibly attempt to increase revenue by rezoning for commercial or industrial development. There are far more parcels for which Proposition 15 is likely to incent private owners to convert from commercial or industrial use to

residential use to reduce their tax liability. We now turn to quantifying and comparing those incentives for eligible parcels.

Municipal Incentives to Rezone

If Proposition 15 passes and goes into effect, cities will likely see a significant increase in property tax revenue (Ito et al. 2018; LAO 2020). In the short term, reassessment of commercial and industrial properties will substantially increase the tax base. Over time, as reassessments continue, revenue from commercial and industrial properties will increase at the same rate as property values. We estimate upper-bound estimates of additional revenue cities might receive both from the initial reassessments (the short-term incentive) and from higher appreciation rates over time (the long-run incentive).

Short-Term Incentives

We limit our analysis of municipalities' short-term incentives to vacant at-risk properties (and exclude aging residential structures) because development lags in California make it unlikely that aging residential structures could be rezoned and redeveloped before Proposition 15 goes into effect. If privately owned property were rezoned, the land would be carried at historical cost, and the differences in the structure's tax treatment are accounted for in our estimates of long-term incentives. In each city, we measure the revenue increase the city would receive from vacant at-risk properties being improved and brought to market value for commercial or industrial use.

Los Angeles would stand to gain up to $3.8 million in revenue for rezoning all at-risk vacant properties in the short term (table 4.2). The city's short-term revenue is calculated as the difference between the estimated market value if redeveloped and the current total assessed value of all vacant at-risk property times the implicit tax rate (see appendix A for calculation of implicit tax rates). For more information on how we estimated market values, see appendix A. The short-term incentive numbers are much smaller for Fresno ($144,057) and Berkeley ($12,785). There were so few at-risk properties in Chula Vista that we did not display the results.

TABLE 4.2

Short-Term Incentives for Municipalities on Vacant At-Risk Parcels

	Los Angeles	Fresno	Berkeley
Annual revenue on at-risk parcels	$964,226	$10,729	$16,596
Potential revenue if reassessed	$4,731,524	$154,786	$29,381
Additional revenue	$3,767,298	$144,057	$12,785
Jurisdiction's total property tax revenue (2019)	$1,612,148,631	$84,219,614	$73,721,177
Share of total property tax revenue	0.23%	0.17%	0.02%

Sources: First American and the California State Controller's Office.

In context of the jurisdictions' annual revenue from property taxes, the additional revenue is small. The short-term incentive alone makes up 0.23 percent of the jurisdiction's total 2019 property tax revenue in Los Angeles, 0.17 percent in Fresno, and 0.02 percent in Berkeley.

Long-Term Incentives

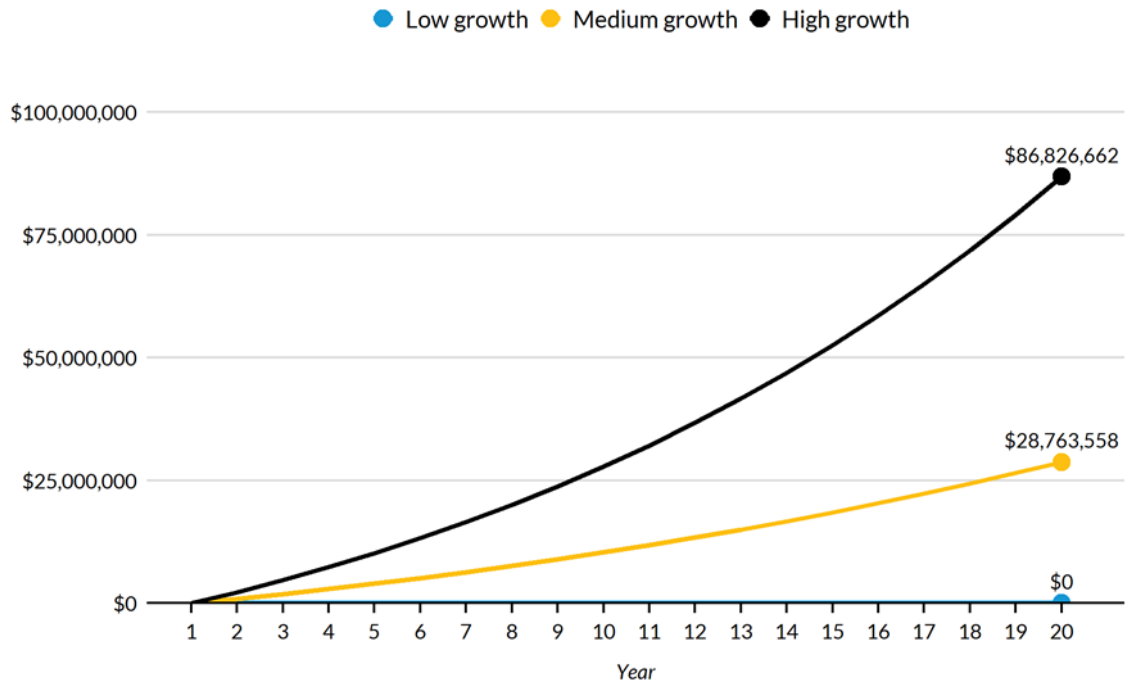
We also examine the long-term incentives for municipalities to rezone all at-risk properties to commercial or industrial use. For this estimate, we assume that each rezoned property has been redeveloped, sold, and reassessed at market value in the first year. We then compare the property tax revenue to the city if the properties remained residential with the property tax revenue the city would receive if the property is converted to commercial or industrial use. We model the market value of the improved structure based on similar sales of commercial and multifamily properties. More detail on this approach can be found in appendix A.

Over time, the jurisdictions will see revenue increases from properties being taxed on their true market value instead of being frozen at a 2 percent annual increase. In practice, the increase in revenue is based on how much the property appreciates each year. Amid uncertain economic conditions, we estimate three scenarios: low growth (2 percent appreciation), medium growth (3.5 percent appreciation), and high growth (5.7 percent appreciation).

Figure 4.2 displays the net revenue Los Angeles would receive if it rezoned all at-risk properties to prevent residential use and all the parcels were sold or redeveloped within a year of Proposition 15 taking effect.

FIGURE 4.2

Wedge in Revenue between Commercial or Industrial Properties and Residential Properties in Los Angeles



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Source: Authors' calculations using data from First American and the California State Controller's Office.
Note: The dollar figures represent the increased revenue to the city in that year (i.e., they are not cumulative), and these estimates are not discounted by interest rates over time.

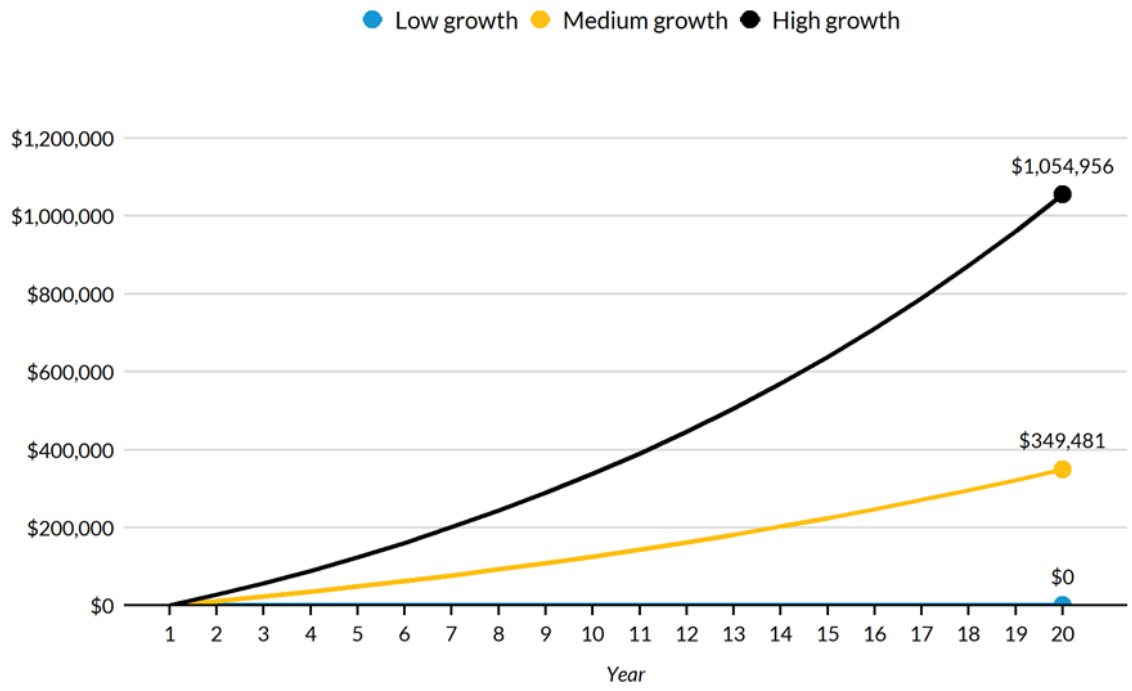
In the long term, under a medium- or high-growth scenario, revenue on commercial or industrial properties will exceed revenue on redeveloped or sold residential properties because those properties appreciate faster. At a 2 percent growth rate, revenue to the city will not increase, as the taxes paid on the parcels increase at 2 percent regardless of land use.

Under a medium-growth scenario, Los Angeles will see an additional $28.7 million in year 20. Under a high-growth scenario, the city would see an additional $86.8 million.

Fresno and Berkeley show similar patterns (figures 4.3 and 4.4). But in Fresno, there were only 19 at-risk properties, so even 20 years after Proposition 15 is enacted and under the highest growth scenario, the city stands to gain just over $1 million.

FIGURE 4.3

Wedge in Revenue between Commercial or Industrial Properties and Residential Properties in Fresno



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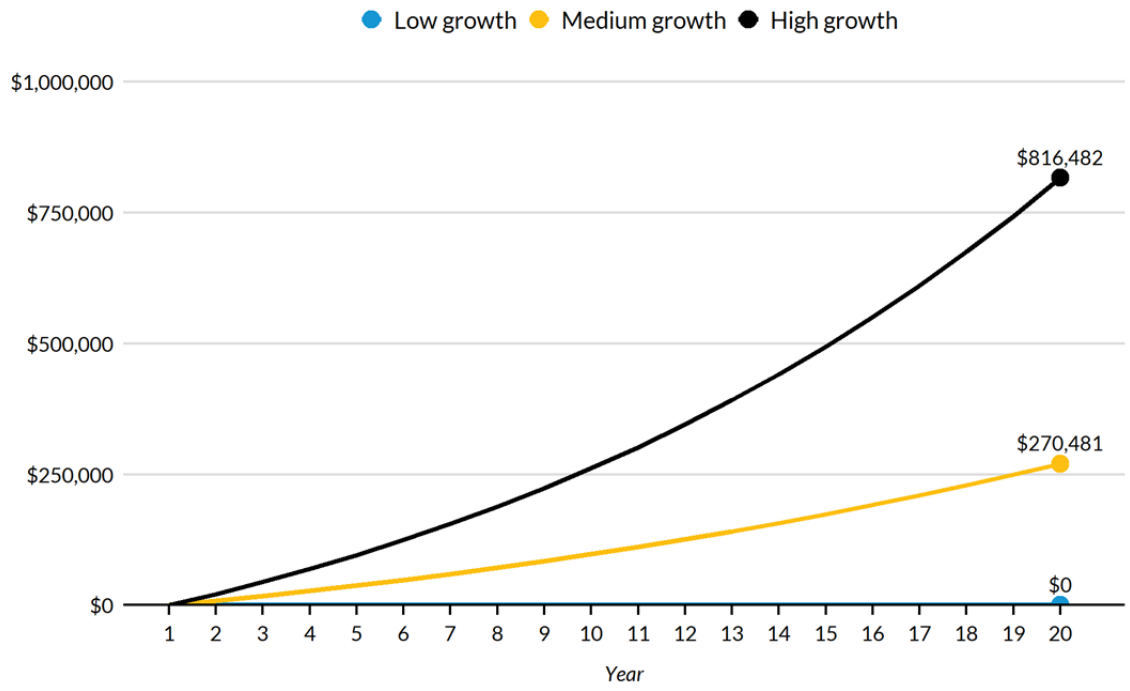
Source: Authors' calculations using data from First American and the California State Controller's Office.
Note: The dollar figures represent the increased revenue to the city in that year (i.e., they are not cumulative), and these estimates are not discounted by interest rates over time.

Berkeley has only 23 at-risk parcels. By year 20, annual revenue on commercial parcels will be $270,000 higher than on residential parcels of the same value under a medium-growth scenario, compared with $816,000 higher under a high-growth scenario.

FIGURE 4.4

Wedge in Revenue between Commercial or Industrial Properties and Residential Properties in Berkeley



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Source: Authors' calculations using data from First American and the California State Controller's Office.
Note: The dollar figures represent the increased revenue to the city in that year (i.e., they are not cumulative), and these estimates are not discounted by interest rates over time.

Cities stand to receive a short-run benefit for rezoning vacant residential lots to commercial or industrial uses. But this revenue is small relative to new revenue received when parcels are sold or redeveloped. In cities like Fresno and Berkeley, it will take 10 years for the municipality to realize significant additional revenue on parcels that are sold or redeveloped, even under a high-growth scenario. And in the COVID-19 environment, it is difficult to see a high-growth scenario emerge.

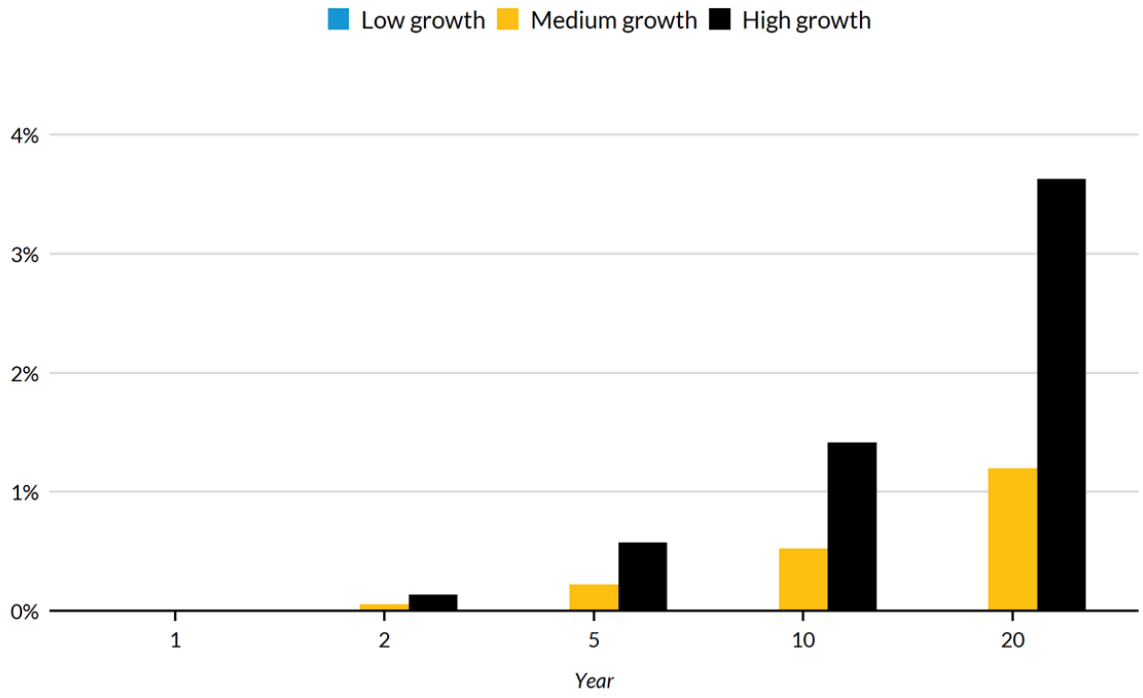
Moreover, both the short- and long-run revenue increases are only a small share of each city's total property tax revenue, even in the highest-growth scenario. As shown in the figures above, even with the most aggressive assumptions (i.e., the city rezones all at-risk residential properties to industrial use, all those properties convert to industrial use in the first year, and prices appreciate by 5.7 percent annually), Los Angeles would stand to gain an additional $86.8 million in property tax revenue 20 years after Proposition 15 goes into effect. But this constitutes less than 4 percent of the city's total property tax revenue in 2019 ($1.6 billion) when discounted by 2 percent annually (figure 4.5). Under a medium-growth scenario, increased revenue in Los Angeles would equate to less than half of 1 percent of

property tax revenue. And, once again, under a low-growth scenario the benefits of rezoning disappear, as the taxes paid on at-risk properties are increasing at 2 percent regardless of the land use.

Increased revenue in the 20th year would be less than 1 percent of Fresno's total property tax revenue in 2019 under a high-growth scenario and around 0.7 percent of Berkeley's. Under a medium-growth scenario, neither city would see a revenue increase of more than 0.4 percent of their total revenue by year 20.

FIGURE 4.5

Potential Revenue from Taxing At-Risk Properties at Market Value, as a Share of Total Jurisdiction Property Tax Revenue in 2019 in Los Angeles



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Source: Authors' calculations using data from First American and the California State Controller's Office.
Note: The dollar figures represent the potential for increased revenue to the city in that year (i.e., they are not cumulative). These estimates are discounted by a 2 percent annual interest rate to make a fairer comparison with the city's 2019 property tax revenue.

Owner Incentives to Redevelop

The opportunity for jurisdictions to increase their revenue is limited, but private property owners have a larger incentive to convert parcels to residential use to reduce their future tax liability. This is because they can pocket every dollar they save in taxes.

If Proposition 15 passes, owners of commercial and industrial properties will face an increase in their tax liability. Facing these higher costs, some owners may sell their property. This may be especially likely for owners holding vacant or underutilized land that produces less revenue. The decision to hold, sell, or develop a property will depend on its current value, its profitability in its current use, and the owner's expectations about its future value. Without property-level information on revenue streams, we cannot estimate the short-run incentive for a commercial property owner to sell their property or the likelihood that the next owner would use the property for residential development.

We can, however, estimate the tax savings the new owners realize if they purchase properties that have been or can be converted from commercial or industrial use to residential use. And assuming that existing owners would be unable to convert a property's use before the initial reassessments required under Proposition 15, the same savings would apply to current owners who choose to redevelop and convert from commercial use to residential use. In year 1, existing commercial and industrial property owners will see their properties reassessed at market value, and improvements on the land will be reassessed when it is developed, regardless of use. Similarly, new owners will pay property taxes on the market value no matter the use or zoning.

Over time, owners will see a significant decrease in their tax liability for residential properties under medium- and high-growth scenarios, as increases in their tax bill for residential parcels are capped at 2 percent, compared with commercial and industrial properties, which are taxed at their true market value.

Table 4.3 shows how much private owners stand to gain from converting commercial and industrial properties to residential land use in all four case study cities. To make apples-to-apples comparisons with at-risk properties, we assume every eligible parcel will be redeveloped or sold and compare the tax liability if the parcel is redeveloped or sold for commercial or industrial use with the tax liability if it is redeveloped for residential use.

TABLE 4.3

Decrease in Tax Liability from Converting Commercial or Industrial Properties to Residential Land Use

	Low growth	Medium growth	High growth
Los Angeles			
1 year	$0	$0	$0
5 years	$0	$51,341,749	$130,435,526
10 years	$0	$132,368,803	$355,408,462
20 years	$0	$367,402,037	$1,109,052,388
Fresno			
1 year	$0	$0	$0
5 years	$0	$4,578,385	$11,631,548
10 years	$0	$11,803,948	$31,693,441
20 years	$0	$32,762,964	$98,899,407
Chula Vista			
1 year	$0	$0	$0
5 years	$0	$486,715	$1,236,517
10 years	$0	$1,254,845	$3,369,241
20 years	$0	$3,482,939	$10,513,720
Berkeley			
1 year	$0	$0	$0
5 years	$0	$292,350	$742,726
10 years	$0	$753,734	$2,023,767
20 years	$0	$2,092,061	$6,315,166

Source: Authors' calculations using data from First American property records and the California State Controller's Office.

In Los Angeles, the jurisdiction with the most opportunity parcels, owners would see a $367 million decrease in their tax liability 20 years after Proposition 15 was enacted if they converted their opportunity parcels to residential use, rather than leaving them vacant or used for commercial or industrial purposes. Under a high-growth scenario, tax savings increase to $1.1 billion.

Owners in Fresno, Chula Vista, and Berkeley would also see reduced tax liability when converting their commercial or industrial properties to residential uses under Proposition 15. In Fresno, by year 20, owners would save $32.8 million under a medium-growth scenario and $98.9 million under a high-growth scenario. In Chula Vista, owners would save $3.5 million under a medium-growth scenario and $10.5 million under a high-growth scenario. In Berkeley, owners would save $2.1 million and $6.3 million.

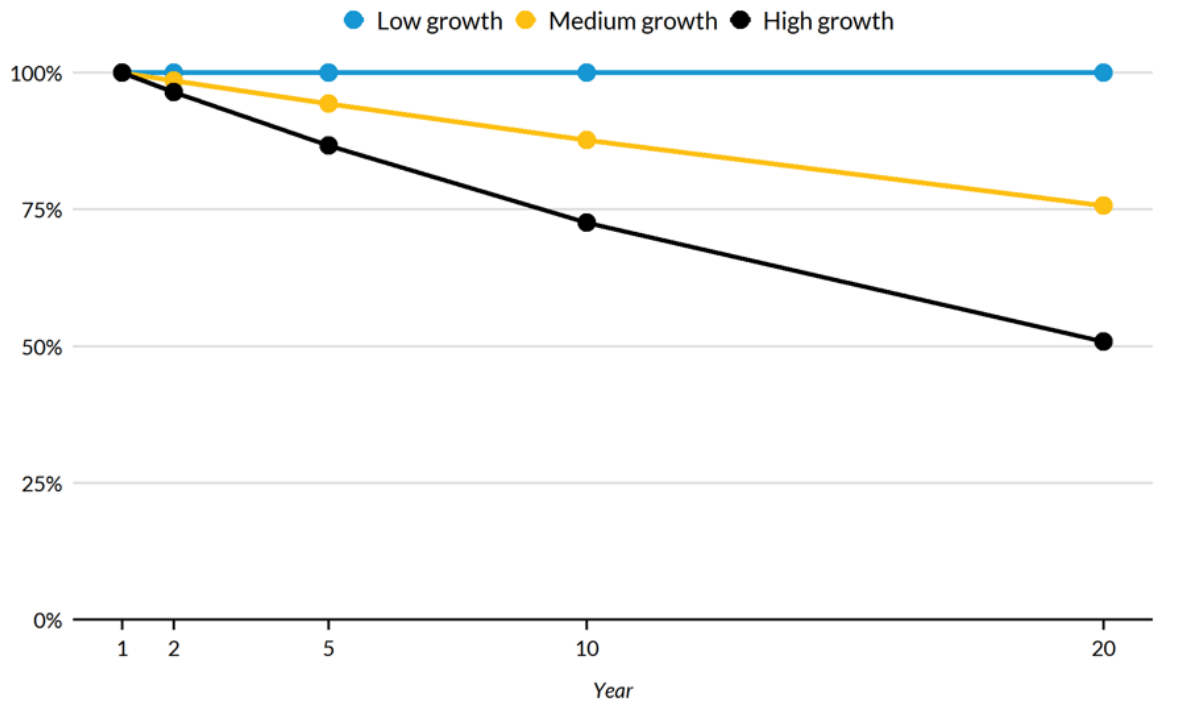
We can put these numbers into context by looking at the taxes paid on a residential property as a share of the taxes paid on a commercial or industrial property of the same value. If the properties of different land use start at the same value, the taxes paid over time is a function of the commercial or industrial appreciation rate. This is because taxes paid on a commercial or industrial property under

Proposition 15 will increase at the market value, whereas taxes paid on a residential property cannot increase by more than 2 percent a year.

Under low-growth conditions (a 2 percent appreciation rate), owners will have the same tax liability for commercial, industrial, and residential properties. Under medium- and high-growth scenarios, taxes paid on a residential property will decline as a share of taxes paid on a commercial or industrial property. Under a medium-growth scenario, taxes on a residential parcel will be 88 percent of taxes paid on a commercial property in 10 years and 76 percent in 20 years. Under a high-growth scenario, the owner sees even more savings: taxes paid on a residential property will be 73 percent of taxes paid on a commercial or industrial use after 10 years and 51 percent after 20 years.

FIGURE 4.6

Taxes Paid on a Residential Property, as a Share of Taxed Paid on a Commercial Property of the Same Value



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Source: Authors' calculations using data from First American property records.

Comparing Public and Private Incentives

Public incentives to rezone at-risk parcels to exclusively commercial or industrial uses are weaker than private incentives to convert commercial or industrial opportunity properties to residential use. This is true regardless of the time horizon for the analysis. In table 4.4, we compare the competing public and private incentives under a medium-growth scenario, with the caveat that owners and local governments may respond to their incentives differently.

TABLE 4.4

Comparison of Incentives from At-Risk and Opportunity Parcels

	Los Angeles		Fresno		Berkeley	
Year	At-risk benefits	Opportunity benefits	At-risk benefits	Opportunity benefits	At-risk benefits	Opportunity benefits
Short term	$3,767,298	n/a	$144,057	n/a	$12,785	n/a
1 year	$0	$0	$0	0	$0	$0
2 years	$926,243	$11,831,071	$11,254	$1,055,032	$8,710	$67,368
5 years	$4,019,497	$51,341,749	$48,837	$4,578,385	$37,798	$292,350
10 years	$10,363,028	$132,368,803	$125,912	$11,803,948	$97,450	$753,734
20 years	$28,763,558	$367,402,037	$349,481	$32,762,964	$270,481	$2,092,061

Source: Authors' calculations of a medium-growth split-roll scenario using data from First American property records and the California State Controller's Office.

In every city, private owners stand to gain more in tax savings by converting opportunity properties to residential use than jurisdictions could gain by rezoning at-risk parcels. This is partly because cities receive only a share of the revenue generated from properties within their boundaries—with the rest going to schools, the county government, or special districts.

Considerations and Limitations

To estimate the scope and scale of incentives related to land use and housing development that public and private actors would face under Proposition 15, we relied on several stylized facts and assumptions, which we present in the methods section. How Proposition 15 affects local land-use and development decisions in practice will depend on several factors we could not account for or fully model.

For example, the strength of incentives for public and private actors will depend on the strength and diversity of local real estate markets. Public decisions regarding zoning and private decisions regarding land development are not based solely (or even primarily) on tax revenue and liability considerations. Public decisionmakers will respond to constituent preferences and market demand for

different land uses. Private decisions will be driven by current market demand for each use, current and expected revenue streams that can be derived from it, and expectations about current and future real estate prices. The COVID-19 pandemic and its economic fallout creates additional uncertainty about demand for land uses and the strength of local markets. To the extent that COVID-19 increases demand for residential properties and weakens demand for commercial properties, our results would be even stronger.

Because of data limitations, we could not model the relationship between land use and local demand, current or future revenue streams, or changes in demand or future revenues caused by expected market shifts from COVID-19 and the current recession. Although these factors will have major implications on land use and municipal revenue, they will not affect the direction of our estimates. This is because we estimate only the marginal changes in incentives caused by Proposition 15, which itself is only one of many factors that affect property values or land-use decisions. In addition, we account for market uncertainty by including assumptions based on high, medium, and low price-appreciation scenarios.

Similarly, we could not estimate the pace at which properties will transact. In estimating the magnitude of incentives, we assumed that for both at-risk and opportunity properties, every eligible at-risk property would be rezoned and redeveloped as commercial or industrial use and every eligible opportunity property would be redeveloped as residential use in the first year Proposition 15 goes into effect. Of course, in reality, properties are likely to be rezoned and redeveloped over time, which would moderate the magnitude of incentives, especially for at-risk properties. But even under this aggressive assumption, the potential gains in revenue to cities are trivial compared with the city's total property tax revenue and compared with the incentives to owners.

On the at-risk property side, we model incentives to cities to rezone properties, not incentives related to public permitting and entitlements for new residential developments. Where cities retain significant discretion to approve or disapprove residential development projects, Proposition 15 may affect discretionary decisions regarding permitting and entitlements of residential properties even when rezoning is implausible or impossible. But the moderating effects of apportionment schedules will reduce these incentives as well. Most cities in California would receive only a fraction of any incremental tax revenue from commercial or industrial development under Proposition 15, mitigating any additional incentive (beyond current ones) to withhold entitlements for residential development. In addition, because most of the bump in tax revenue to cities comes from the sale of a property, not from a conversion of its use, it would be irrational for cities to withhold entitlements hoping for an alternative use to come along, at least from the perspective of generating new tax revenue. And to the extent that

commercial properties sell for less than comparable residential properties, the incentives to rezone commercial parcels are further reduced.

We also did not model how Proposition 15 may affect public incentives for counties to rezone land in unincorporated areas of California. Most of the state's 482 municipalities are responsible for zoning (and otherwise regulating land) within their borders, and they are subject to the apportionment rules for property taxes described above. But county governments in California are responsible for zoning land in unincorporated areas, and they are subject to different rules regarding apportionment. Generally, property taxes constitute a higher share of counties' revenue and counties "keep" a greater share of the property taxes they raise in unincorporated areas (Elledge 2006; ILG 2016). This could lead to greater incentives for counties to rezone residential land for industrial or commercial use to capture additional property tax revenue under Proposition 15. As a result, our analysis and findings regarding incentives to rezone at-risk properties apply to municipalities only. Our analysis and findings regarding private incentives to redevelop vacant and underutilized commercial and industrial land for residential use apply to both municipalities and unincorporated areas.

Lastly, we could not model the political or legal dynamics that may thwart attempts by cities to rezone or owners to redevelop. Ultimately, Proposition 15 is unlikely to substantially alter the politics of land-use development, including community opposition to new development (especially when it involves more intensive uses than currently allowed) and lobbying and pressure from multiple local stakeholders, including property owners and developers.

In terms of legal dynamics, California has adopted several statewide laws that limit cities' ability to exclude or deny new residential development, such as the Housing Crisis Act of 2019, which temporarily limits the power of cities and counties to restrict new housing developments through new regulations or conditions, including though zoning changes that result in a less intensive use (Maclean, Sussman, and Golub 2019).[23] Other statewide laws prevent cities from further restricting housing development (Infranca 2019).[24] So even though our analysis provides an estimate of municipal *incentives* to rezone to exclude new housing development under Proposition 15, it tells us nothing about cities' *ability* to act on these incentives. State laws in California that prohibit rezoning to exclude new residential development would render the municipal incentives we estimate here moot, while preserving incentives to private owners and developers to build more residential units under Proposition 15.

5. Implications

By any measure, California has one of the worst housing supply shortages in the nation. It ranks 49th out of the 50 states in the number of housing units per resident. The gap between housing production and population growth has increased. Since 2005, California has added fewer new housing units per capita than any other state (Woetzel et al. 2016). This housing shortage has led to a sharp increase in prices relative to incomes, which affects homeowners, renters, and employers and constrains the state's economy (Taylor 2015). According to the Public Policy Institute of California, median monthly housing costs for homeowners with mortgages in California are 47 percent higher than in the rest of the nation, and renters in California pay 40 percent more that the nationwide median (PPIC 2018).

For low-income Californians, the picture is even bleaker. More than 80 percent of low-income households in California are cost burdened (i.e., they pay more than 30 percent of their income on housing), and more than half of low-income households are severely cost burdened (i.e., they pay more than half of their income on housing) (Kimberlin 2019). High housing costs have also contributed to high—and rising—rates of homelessness. Between 2014 and 2018, the number of unsheltered people experiencing homelessness across the state grew by 25 percent to 89,500 (JCHS 2019).

Although Proposition 15 is not designed to address the housing shortage, some housing advocates argue that new property tax revenue generated by marking larger commercial properties to market could be used to support affordable housing and services. On the other hand, several critics of the ballot initiative argue that Proposition 15 could exacerbate California's housing shortage by incenting municipalities to rezone properties from residential use to commercial or industrial use to capture new tax revenue from a split-roll assessment scheme.

In this report, we have shown that the incentives to do the latter are low. All four cities we examined have few residential properties close to commercial or industrial centers than could plausibly be rezoned. In addition, municipalities with zoning authority receive only a fraction of any incremental increase in property tax revenue from split roll because of the apportionment formula by which counties determine how much property tax revenue is returned to municipalities in which a property is located. California's apportionment formulas, which divide the property tax revenue among schools, special districts, and local governments, diminish the incentive even further.

In contrast, we have shown that owners of vacant and underutilized commercial and industrial properties in California would have strong incentives to develop or convert those properties to residential use to limit their tax liability under a split-roll assessment scheme. All four cities we

examined have more properties eligible to be converted to residential use than to be rezoned away from residential use. And financial incentives for owners and developers to build residential housing where permitted increase significantly under split roll. Unlike cities, property owners would also capture the full amount of savings. We believe this set of incentives has not been given the proper weight in prior analyses.

Even so, Proposition 15 is not a panacea for California's housing woes. Our estimates of the incentives for owners to convert vacant and underutilized commercial and industrial properties to residential use rely on moderate to high price appreciation. In addition, even where residential conversions are permitted, they may not materialize because of high construction costs, complex permitting and entitlements processes, and other factors.

Far more dramatic actions than Proposition 15 are needed, and there are plenty of smart proposals for statewide reforms that could boost the housing supply and ease cost burdens in California (Garcia, Tucker, and Schmidt 2020; Reid, Galante, and Weinstein-Carnes 2017; Terner Center 2019; Woetzel et al. 2016). And state lawmakers are already taking bold action to boost supply and lift local barriers to housing production and affordability.[25] Our research is not designed to evaluate alternative proposals for housing reforms. Rather, we set out to test whether Proposition 15 is likely to make matters worse, and we conclude that it will not.

But there are a few insights our research offers that might inform future tax and land-use reform efforts aimed at boosting the housing supply. Allowing multifamily housing development as of right on any land zoned for commercial use would eliminate most use-based constraints on housing development in local zoning codes. In this research, we defined "at-risk" properties as parcels that could be rezoned from residential use to commercial or industrial use, depending on whether residential properties were permitted in commercial zones (as in Los Angeles or Berkeley) or excluded or only allowed as a conditional use (as in Fresno and Chula Vista). If Fresno and Chula Vista allowed residential development as of right in all commercial zones, the number of at-risk properties in both cities would have been significantly reduced. Conversely, if Los Angeles or Berkeley prohibited residential development in commercial zones, more properties would have been at risk.

More generally, allowing residential development as of right on land zoned for commercial use would allow the sizeable (and growing) stock of empty or underutilized offices and strip malls to be converted to sorely needed residential development without a lengthy rezoning process.[26]

This flexibility will be even more important as the state recovers from the COVID-19 pandemic and its economic fallout. COVID-19 has reduced demand and prices for commercial properties, while

demand and pricing for residential properties remains strong. The likely result of the underperformance of commercial properties versus residential properties is that market forces will generate more conversions from commercial use to residential use in the months and years ahead.

COVID-19 gives us a unique opportunity to undertake policy actions that encourage commercial-to-residential conversions, augmenting those provided by market forces. Proposition 15, if it passes, will provide an additional incentive in this direction. But more direct actions (e.g., accelerating construction permitting for this type of conversion and waiving development impact fees) would provide further incentives in this direction.

Appendix A. Model Description

Apportionment Rates

We retrieved property tax assessment and revenue data from the California State Controller's Office.[27] Using these data, we estimated the current implicit city property tax rate by dividing total city property tax and levy revenue by total assessments on properties in the city. We then separately calculated an implicit "1 percent" tax rate by dividing total city property tax allocation from the 1 percent property tax by total assessments. And we calculated a local levy rate by dividing levy revenue by total assessments. These values appear in table A.1.

TABLE A.1
Estimated Implicit Tax Rates

City	County	Apportionment rate	Implicit "1%" tax rate	Local levy rate	Estimated implicit tax rate
Los Angeles	Los Angeles	24.1%	0.241%	0.023%	0.265%
Fresno	Fresno	19.9%	0.199%	0.033%	0.232%
Berkeley	Alameda	33.1%	0.331%	0.051%	0.382%
Chula Vista	San Diego	11.7%	0.117%	0.000%	0.117%

Source: Authors' calculations based on 2019 data from the California State Controller's Office.

Estimating Market Values

To estimate incentives for both cities and property owners, we had to predict the market values of the at-risk and opportunity parcels. We built a model using deeds data of sales transactions from the case study jurisdictions from 2005 through 2019.

The sample we used consisted of all multifamily and commercial transactions. We used historical data from the Moody's Analytics Commercial Property Price Indices to estimate the appreciation that would have occurred since the quarter of the sales transaction to the present. For multifamily transactions (four or more units), we used the apartment index, and for commercial transactions, we used the general commercial index. We calculated the change in the index since the quarter of the sale to the most recent quarter (fourth quarter of 2019) and then applied this change to the sales price to estimate what the property would have sold for today. This is the adjusted sales price.

Our estimated value was the average of two valuation methods. The first method was a log-linear model of lot size on adjusted sales price, with tract fixed effects. Using lot size allowed us to predict the value of vacant lots if they were to be developed and predict the market value of other parcels that are aging or may not have been reassessed for many years because of Proposition 13. We used this model to predict values for all parcels in the case study cities. If a census tract did not have any commercial or multifamily transactions since 2005, we used a model without tract fixed effects.

TABLE A.2

Log-Linear Lot-Value Regression Dependent Variable: Log Sales Price

	Los Angeles		Fresno	
Lot size (acres)	-0.00002***	-0.00003***	0.0003***	0.0003***
	(0.00000)	(0.00000)	(0.00001)	(0.00001)
Constant	14.421***	14.267***	13.068***	12.794***
	(0.349)	(0.007)	(0.087)	(0.012)
Tract fixed effects	Y	N	Y	N
Observations	28,102	28,666	6,489	6,742

	Chula Vista		Berkeley	
Lot size (acres)	0.0004***	0.0002***	0.001***	0.001***
	(0.00003)	(0.00002)	(0.0001)	(0.0001)
Constant	14.419***	13.755***	13.749***	14.114***
	(0.507)	(0.047)	(1.015)	(0.043)
Tract fixed effects	Y	N	Y	N
Observations	784	804	906	916

Source: Author's calculations from First American property records data.

*** $p < 0.01$.

The second method was a metric for price per acre by census tract. For all transactions, we divided the adjusted sales price by the lot size (in acres) and took the average by census tract. For census tracts that did not have any transactions, we used the jurisdiction-wide average. We used this price-per-acre metric to calculate an estimated market value for all transactions.

Our final estimated value was the average of the log-linear model and the price-per-square-foot metric. This market value estimation does not account for the specific characteristics of individual properties, and some properties may have characteristics that make it prohibitively expensive to be improved. We did not include separate valuations for commercial and multifamily uses, assuming that the land would be used for the highest and best use. This allows our results to be comparable under different tax environments.

TABLE A.3

Descriptive Statistics of Case Study Cities

	Los Angeles	Fresno	Chula Vista	Berkeley
Observations	796,756	136,833	68,137	29,259
Average lot size (acres)	179	202	208	130
Standard deviation of lot size (acres)	363	475	470	134
Average assessed value	$656,301	$235,391	$390,265	$616,363
Standard deviation of assessed value	$2,843,994	$811,795	$883,475	$1,320,985
Average estimated market value	$2,936,514	$703,566	$1,087,210	$2,056,544
Standard deviation of estimated market value	$3,409,549	$1,026,953	$1,322,465	$1,481,318

Source: Authors' calculations based on 2019 data from the California State Controller's Office.

Appendix B. Identifying At-Risk and Opportunity Parcels

To be considered at risk or opportunity, parcels had to meet various criteria. This resulted in a small amount of at-risk and opportunity parcels. Table B.1 shows how many parcels meet the criteria for at-risk or opportunity parcels after layering the different requirements. For instance, looking at at-risk parcels, Fresno has 132,540 parcels available to analyze. Of those, 31,263 were either vacant or had an aging residential structure, and 19,445 of those parcels are near commercial or industrial parcels. Of those, only 2,112 are zoned for multifamily housing. Finally, only 19 of those parcels had a market value of at least $3 million.

TABLE B.1

Layered Criteria for At-Risk Parcels

	Los Angeles	Fresno	Chula Vista	Berkeley
Total parcels	757,168	132,540	64,169	28,108
…with a vacant or aging residential structure	177,420	31,263	14,836	6,158
…and proximity to industrial or commercial parcels	40,899	19,445	5,112	621
…and zoning allows multifamily	29,309	2,112	1,567	500
…and predicted market value ≥ $3 million	3,830	19	5	23

Source: Authors' calculations from First American property records data, review of local zoning codes.
Notes: We included only parcels with precise geographic information. For Los Angeles and Berkeley, we used proximity to industrial parcels. For Fresno and Chula Vista, we used proximity to commercial or industrial parcels.

TABLE B.2

Layered Criteria for Opportunity Parcels

	Los Angeles	Fresno	Chula Vista	Berkeley
Total parcels	757,168	132,540	64,169	28,108
…with a vacant or aging commercial or industrial structure	27,526	3,877	1,138	743
…and on privately owned	26,356	3,870	1,137	743
…and zoning allows commercial and multifamily	21,232	2,939	463	322
…and predicted market value ≥ $3 million	8,104	291	91	88

Source: Authors' calculations from First American property records data, review of local zoning codes.
Note: We used only parcels with precise geographic information.

Notes

[1] Gabriel Petek and Keely Martin Bosler, letter to Attorney General Xavier Becerra, October 2, 2019, https://lao.ca.gov/ballot/2019/190523.pdf.

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[8] Wildermuth, "Big Change in California's Proposition 13."

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[10] Joffe, "The Risks and Negative Side Effects"; and "Ed Kilgore, "California to Vote on Partial Repeal of Sweeping Tax Law," *New York*, August 17, 2018, https://nymag.com/intelligencer/2018/08/california-to-vote-on-partial-repeal-of-sweeping-tax-law.html.

[11] Proposition 13 also includes exceptions to the tax rate cap to finance certain types of public debt (Taylor 2016). See also "State-by-State Property Tax at a Glance," Lincoln Institute of Land Policy, accessed September 16, 2020, https://www.lincolninst.edu/research-data/data-toolkits/significant-features-property-tax/state-state-property-tax-glance/property-tax-data-visualization.

[12] "State-by-State," Lincoln Institute.

[13] "State-by-State," Lincoln Institute.

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[15] Authors' calculations using 2019 data from the California State Controller's Office. Analysis excludes San Francisco's consolidated county and city government.

[16] "State-by-State," Lincoln Institute.

[17] Proposition 15 excludes the residential portion of mixed-use properties from its proposed assessment system. It also allows the California legislature to exclude from reassessment the commercial potion of a mixed-use property if at least 75 percent of the property (by square footage or value) is residential.

[18] Gabriel Petek and Keely Martin Bosler, letter to Attorney General Xavier Becerra, October 2, 2019, https://lao.ca.gov/ballot/2019/190523.pdf.

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[20] Joffe, "The Risks and Negative Side Effects"; and Kilgore, "California to Vote."

[21] An, "The 'Split-Roll' Initiative"; and Veale, "Could Proposition 13."

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