CALIFORNIA HOUSING TRENDS

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Introduction

This report provides a historical perspective on California's housing market as it relates to the state's economic growth and demographic trends. Housing prices in California have increased at a faster rate than personal incomes, eroding housing affordability. This trend has persisted for years and is likely to continue indefinitely. Housing policy changes and tax reforms could affect the future escalation in housing prices, but their impacts would inevitably leave some Californians better off and others worse off.

California is one of the largest economies in the world and is by far the largest state contributor to the U.S. economy. California's share of gross domestic product (GDP) has also increased over time as its annual growth tends to outpace the U.S. average. The state accounted for more than 14 percent of U.S. GDP in 2017, up from 11 percent in the late 1960s and early 1970s. Much of the state's GDP growth over the past couple of decades can be attributed to new jobs in high-wage occupations and industries, especially technology. These jobs tend to be clustered in the state's coastal urban centers, where high-salaried employment coincides with strong "quality of life" residential demand. Access to beaches and ocean recreation, proximity to the mountains, favorable year-round climate, and extensive urban amenities have long been powerful attractions. All of these factors drive demand for more housing and public infrastructure.

For various reasons, however, the net additions to housing supply have not kept pace with demand. The state has especially struggled to expand its supply of "affordable" housing—generally defined as housing for which occupant(s) pay no more than 30 percent of their income, including utilities. Put another way, only those Californians with high-paying jobs or previously accumulated wealth can reasonably afford to live in coastal areas.

The growing gap between housing demand and supply has contributed to a sharp rise in Californians' housing costs. And while many areas in the U.S. are experiencing housing affordability issues, they are most widely and acutely felt by movers to California's coast. As of the first quarter of 2018, California was home to all of the top ten least affordable U.S. metropolitan areas with populations over 500,000, and nine of the top ten least affordable metro areas with populations under 500,000 based on standard mortgage underwriting criteria (NAHB/Wells Fargo, 2018). Moreover, housing affordability is in the forefront of residents' minds. A September 2017 poll of registered voters in California found that 82 percent of homeowners and 87 percent of renters consider housing affordability to be an "extremely serious" or "somewhat serious" issue in their community. Furthermore, approximately two-thirds of renters and voters under 50 said they have considered moving due to rising housing costs in their area (DiCamillo, 2017).

Despite broad public support for housing policy reform in general, the state's regulatory landscape, natural geographic constraints, and political climate make it difficult to address these issues in a meaningful and sustainable way. Local land use regulations often severely limit the number of new residential housing units. Besides basic physical barriers (e.g., ocean and mountains) and local infrastructure utilized near capacity, California also has higher construction costs than most of the U.S. (Terner Center for Housing Innovation, 2018). Following the 1978 passage of Proposition 13, which capped property taxes at one percent of market value and limited the appreciation of assessed valuations for existing homeowners to two percent per year, local governments tended to shift the burden of their infrastructure costs to developers. Many jurisdictions also empower residents to challenge development projects they perceive will negatively impact their quality of life. Intended or not, the cumulative impact of these policies and regulations has been to make residential development cost-prohibitive for all but the most expensive housing projects.

Appreciating home values are a boon for existing homeowners and add substantially to household wealth. However, their net economic impact on the state is mixed. Higher costs also incentivize renters to take on roommates, move to outlying communities, or relocate out of the area. Households with high rent burdens have less disposable income to save or spend on other forms of consumption, thus reducing local demand for goods and services as well as limiting their ability to absorb economic shocks. Additionally, high housing prices may also delay major milestones for renters and prospective first-time homebuyers, such as marriage and having children. Some renters are so burdened that they are never able to accumulate the capital necessary to purchase a home locally, even if homeownership would be more affordable in the long term.

This report begins with a review of California's economic growth over the course of the past 50 years. We then look at the population changes that have accompanied this growth. From there the focus turns to housing market impacts and responses to growth—demand, supply, sales prices, rents, and affordability over time for Californians of all ages. We conclude with a look at supply constraints and the effectiveness of laws aimed at making housing more affordable.

An Overview of California's Economy

Gross Domestic Product

Gross Domestic Product (GDP) per person is an excellent measure of economic well-being. When adjusted for the effects of inflation, trends in GDP per capita give a clear picture of economic progress for broad segments of the population. Figure 1 charts real GDP per capita (in constant 2017 dollars) in California as compared to the rest of the country over the last 50 years. By this broad measure, average living standards in both the state and nation have more than doubled since 1967. Note there is a discontinuity in the state-level GDP series at 1997 due to significant change in the Bureau of Economic Analysis's (BEA) estimation methodologies.



Figure 1: Real GDP per Capita, California vs. the Rest of the United States, 1967-2017

Prior to the 1990 recession, California's real GDP per capita averaged approximately 15 percent more than the rest of the U.S. The gap quickly narrowed to about five percent in the early 1990s as the end of the Cold War brought about large reductions in defense spending (particularly in the high-wage aerospace sector) and the

Note: All values are expressed in 2017 constant dollars based on U.S. Bureau of Economic Analysis's GDP implicit price deflator. Vertical bars indicate the starting and ending months of U.S. recessions (peak to trough) as determined by the National Bureau of Economic Research (NBER). GDP estimates prior to 1997 use the Standard Industrial Classification (SIC) system whereas those 1997 and later use the North American Industrial Classification System (NAICS).

Sources: U.S. Bureau of Economic Analysis, 2018; Federal Reserve Bank of St. Louis, 2018; U.S. Census Bureau, 2018; National Bureau of Economic Research, 2018; and RDN analysis.

closure of military installations throughout the state. These spending cuts and base closures had an enormous impact on California, and contributed to a decline in output such that real GDP per capita in 1993 was about four percent less than it had been five years earlier.

The state economy then started a strong expansion that persisted through the rest of the 1990s. This growth spurt coincided with the birth of the internet age as Silicon Valley companies claimed market dominance in a number of fields. California's real GDP per capita grew at an annual average rate of 4.3 percent between 1993 and 2000 compared to 3.5 percent in the rest of the U.S. The eventual bursting of the internet bubble in 2000 was another setback for California. The state's real GDP per capita declined 2.7 percent in 2001, whereas the rest of the nation saw its output per person merely level off.

The next economic growth phase (2002-2007) saw California again out-perform the rest of the country. It was during this period that the global housing price and credit bubbles fueled an expansion of construction activity and associated debt that proved unsustainable. California was a major player in this drama, and one of the states heaviest hit by the subsequent recession. Nonetheless, the gap in GDP per capita between California and the U.S. persisted throughout the recession and the recovery that followed. That gap has only widened during the current economic expansion, which has proved to be yet another remarkable period of technical innovation and commercialization among California's technology giants. We estimate that the state's GDP per capita (\$69,477) in 2017 was approximately 20 percent higher than the rest of the U.S. (\$57,713). This is the largest proportional gap in at least 50 years.

Although California's economy has recently grown faster than the rest of the U.S. on average, other states have individually outperformed California. The state's annualized real GDP growth rate over the last decade (2.0 percent per year) ranks 7th among states nationwide. For comparison, the fastest growing states between 2008 and 2017 were North Dakota (4.9 percent per year), Texas (2.9 percent per year), and Nebraska (2.3 percent per year).

Employment

There are over 23 million part-time and full-time jobs in California, including 8.6 million in the census-defined Los Angeles-Long Beach-Anaheim metro area (Los Angeles and Orange Counties), and 3.1 million in the San Francisco-Oakland-Hayward metro area (San Francisco, Alameda, Marin, Contra Costa, and San Mateo Counties). Figure 2 presents the share of the state's jobs by major economic sector. These shares reflect data for 2016 as compiled by the U.S. Bureau of Economic Analysis (BEA) and represent the most comprehensive measure of total employment available (including agriculture and the self-employed).



Figure 2: Share of Total Employment by Major Sector, California, 2016

Source: U.S. Bureau of Economic Analysis, 2017.

California, like the U.S. overall, is a heavily service-based economy—approximately 75 percent of private-sector jobs are in broadly defined service-providing industries, including Trade, Transportation, and Utilities (16.9 percent), Professional & Business Services (16.1 percent), and Education & Health Services (8.6 percent). Compared to the rest of the U.S., California has relatively more jobs in Professional & Business Services (+1.6 percent), Information (+0.9 percent), and Leisure & Hospitality (+0.6 percent), and relatively fewer jobs in Trade, Transportation, and Utilities (-0.7 percent), Government (-0.7 percent), and Manufacturing (-0.7 percent). These specializations also vary by metro area.

To illustrate, Figure 3 charts the differences in the shares of employment for each industry sector relative to the rest of the United States for California and the Los Angeles-Long Beach-Anaheim (LA) and San Francisco-Oakland-Hayward (SF Bay) metro areas. For example, 14.5 percent of jobs in the U.S. (less California) were in Professional & Business Services compared to 22.5 percent of jobs in the SF Bay metro area for the same sector. The SF Bay metro area's share of employment relative to the U.S. is the difference (8 percent) between these shares. Note that many high-tech companies' employees are classified under the Professional & Business Services sector rather than the Information sector. Moreover, the SF Bay metro area excludes Santa Clara County, where many of the largest companies in the Information sector are headquartered (e.g. Apple and Google). The Census Bureau groups Santa Clara County with San Benito County in the San Jose-Sunnyvale-Santa Clara metro area.



Figure 3: Sectoral Share of Employment Relative to the Rest of the U.S., California, LA Metro Area, and SF Bay Metro Area, 2016

The share of jobs by sector in the LA metro area roughly mirrors the state, the largest differences being in Government (2.9 percent fewer jobs in LA) and Financial Activities (1.4 percent more jobs in LA). The differences are more pronounced between California and the SF Bay metro area, which has 6.4 percent more jobs in Professional & Business Services and 5.3 percent fewer jobs in Trade, Transportation, and Utilities than the state average. Jobs in these sectors are also among the highest and lowest paid, respectively. Average earnings per job are thus considerably higher in the SF Bay metro area as compared to the LA metro area and California. However, this was not always the case. Figure 4 charts the historical trends in average earnings per job for the SF and LA metro areas, California, and the rest of the U.S. Although earnings per job in the SF Bay metro were higher than in the LA metro area for the entire period shown, the gap has increased substantially over time.



Figure 4: Real Average Earnings per Job, SF Bay Metro Area, LA Metro Area, California, and the Rest of the U.S., 1976-2016

Source: U.S. Bureau of Economic Analysis, 2017; National Bureau of Economic Research, 2018; and RDN analysis.

Earnings per job in the SF Bay metro area averaged just 3.7 percent higher than in the LA metro area throughout the 1980s, but quickly diverged during the technology boom of the 1990s that transformed the SF Bay economy. Between 1990 and 2016, the share of nonfarm jobs in Professional and Business Services rose from 14.7 percent to 20.0 percent in the SF Bay metro area but only from 13.3 to 15.1 percent in the LA metro area. Over the same period, the share of jobs in the Information sector also increased 1.2 percentage points in the SF Bay metro area but decreased 0.2 percentage points in LA metro area.

The cumulative impacts of these shifts contributed to significant earnings growth in the SF Bay metro area over the past 30 years, including a fast recovery after the 2007-2009 recession. In contrast, earnings per job in California as well as in the rest of the country were stagnant from 2006 through 2016, registering an increase of just 0.3 percent per year on average. Earnings per job actually fell in the LA metro area during this period, after accounting for inflation. As of 2016, the average earnings per job in the SF Bay metro area were \$91,499, 38.5 percent higher than the LA metro area (\$66,046), and 31.7 percent higher than the state average (\$69,426). Even so, average earnings per job in the LA metro area were still 11.0 percent higher than the rest of the U.S. (\$59,490).

Cost of Living

While Californians' incomes are higher than the national average, prices are higher as well. Using real GDP to compare economic well-being in California to the rest of the nation controls for the effects of inflation over time, but does not account for differences in average price levels within California or between California and other parts of the country. Housing and energy prices in particular are higher in California than in most other states, so that any given level of income goes farther in meeting living needs outside California. These differences in price levels erode the local purchasing power of Californians' earnings relative to the rest of the country. To illustrate, Figure 5 maps the estimated local purchasing power of \$100 by county as of 2015 (\$100 being the national average).





Note: County-level estimates reflect the regional price parity index for the Metropolitan Statistical Area (MSA) that includes the county. Counties not located in an MSA are assumed to have price levels equal to the state average regional price index for nonmetropolitan areas.
Sources: U.S. Bureau of Economic Analysis, 2017; and RDN analysis.

The cost for the same bundle of goods and services purchased by the typical U.S. household varies significantly across the country. Households living in the New York City, Washington, DC, and San Francisco Bay areas have the highest costs, the largest component of which is housing. The relative purchasing power indices of these locations imply that the overall cost of living is 15-20 percent higher than the U.S. average. The coastal Southern California counties of Los Angeles, Orange, San Diego, and Ventura are characterized by living costs which are almost as high.

Housing Market Indicators

Table 1 summarizes broad trends in the supply of and demand for housing in California, including population, average household size, housing units and tenure, and the overall vacancy rate. These data are derived from a combination of state and national sources, including the California Department of Finance (2018) and the U.S. Census Bureau's (2018) annual population, housing unit, vacancy rate, and homeownership rate estimates. Figure 6 through Figure 9 present these trends in more detail, including California's net migration patterns.

Overview

California's population was approximately 39.5 million as of July 2017, having grown at an annualized rate of 0.8 percent since 2010. In contrast, California's population grew at an annual average rate of 1.0 percent in the 2000s

and 1.3 percent in the 1990s. Thus, California is growing, but its growth rate is slowing over time. The current total population also includes a "group quarters" population of about 842,000—i.e. prison inmates, students residing in school dormitories without a separate permanent address, residents of group care facilities, and occupants of other institutions. This population has increased by about 91,000, or 12.1 percent, since 1990.

Housing Market Indicator	1990	2000	2010	2017
Total Population	29,758,213	33,873,086	37,253,956	39,523,613
Average Annual Change (%)	N.A.	1.3%	1.0%	0.8%
Household Population	29,007,329	33,051,896	36,412,191	38,681,700
Average Annual Change (%)	N.A.	1.3%	1.0%	0.9%
Average Household Size	2.79	2.87	2.90	2.97
Total Housing Units	11,182,513	12,214,550	13,670,304	14,070,874
Average Annual Change (%)	N.A.	0.9%	1.1%	0.4%
Occupied Housing Units	10,380,856	11,502,871	12,568,167	13,020,413
Average Annual Change (%)	N.A.	1.0%	0.9%	0.5%
Owner-Occupied Units	5,584,901	6,568,139	7,050,742	7,083,105
Share of Occupied Units	53.8%	57.1%	56.1%	54.4%
Renter-Occupied Units	4,795,955	4,934,732	5,517,425	5,937,308
Share of Occupied Units	46.2%	42.9%	43.9%	45.6%
Vacant for Sale Units	102,371	79,775	180,788	71,547
Homeowner Vacancy Rate (%)	1.8%	1.2%	2.5%	1.0%
Vacant for Rent Units	306,125	232,527	447,359	266,776
Rental Vacancy Rate (%)	6.0%	4.5%	7.5%	4.3%
Other Vacant Units	393,161	399,377	473,990	712,138

Table 1: Key Housing Indicators, California, 1990-2017

Note: Population and housing unit estimates are benchmarked to 1 July. "Other Vacant Units" includes units held for seasonal, recreational, or occasional use, units for migrant workers, units under foreclosure, or units being renovated/repaired, etc.
Sources: California Department of Finance, 2018; U.S. Census Bureau, 2018; IPUMS-

USA, 2017; and RDN analysis.

Between 2010 and 2017, the household population increased an average of 0.9 percent per year whereas the housing stock expanded just 0.4 percent year over the same period. The relative increase in housing demand has contributed to a sharp decline in the homeowner and rental vacancy rates since 2010. Interestingly, another reason for the decrease in available units can be attributed to the increase in "other vacant units," which includes vacation rentals. The share of vacant housing units that are neither for sale nor for long-term rent rose from 43 percent in 2010 to 68 percent in 2017, which also represents an increase from 3.5 percent to 5.5 percent of the total housing stock over the same period. This trend coincides with the rise of online home-sharing platforms, particularly Airbnb, which have prompted many homeowners to convert their properties to short-term rentals, further reducing the residential housing supply and contributing to an increase in housing prices (Barron, Kung, & Proserpio, 2017).

The household population in 2017 was about 38.7 million and occupied about 13 million housing units, implying an average household size of approximately 2.97. An estimated 54.4 percent of occupied housing units in 2017 were owner-occupied and the remaining 45.6 percent were renter-occupied. The homeownership rate in California was increasing prior to the onset of the subprime mortgage crisis, hitting a peak of 60.2 percent in 2006. The homeownership rate then fell steadily until 2012-2013 and has remained flat since, such that it is now about the same rate as it was in the early 1990s (between 54 and 55 percent).

According to the California Department of Finance, the average household size in California has increased from 2.79 per household in 1990 to 2.97 persons per household in 2017. In contrast, the national average household size has trended downwards over time, from 2.63 in 1990 to 2.54 in 2017. It is unclear how much of the increase

in California's household sizes may be attributed to social preferences as opposed to other factors. That is, the increase in household size in California is likely driven by the age and ethnic composition of California's population as well as economic factors such as tight housing markets and relatively higher costs.

Population and Housing Stock

As shown in Figure 6, California's housing stock (the stacked blue and green bars) increased every year from 1991 through 2017, though the amount of this increase showed a strong cyclical pattern. Housing development averaged approximately 100,000 units per year in the 1990s, accelerated to 170,000 units per year from 2002 to 2008, and then fell off substantially, averaging fewer than 65,000 units annually between 2009 and 2017. The composition of the housing added each year has also changed. Prior to the 2007-2009 recession, single-family homes frequently comprised more than 80 percent of the net additions to the housing stock each year. As of 2017, that share has dropped to approximately 43 percent. Multi-family units now comprise most of the new housing construction in California. Meanwhile, household population also expanded every year from 1991-2017, but on a different cycle than the housing stock. Strong population growth in the early 1990s was followed first by much-reduced gains in the mid-1990s and then by more robust expansion through the early 2000s. Household population increases have been relatively steady at 250,000-350,000 persons per year since 2005.

Overall, California's household population has been growing at a faster rate than its housing supply. Between 1990 and 2017, the population expanded 33.4 percent whereas the housing supply has only increased 25.8 percent, or about 32 new housing units for every 100 new residents. For comparison, the rest of the U.S. added approximately 40 new housing units for every 100 new residents over the same period. The excess demand correlates with lower vacancy rates, larger household sizes, and higher housing prices.





Source: California Department of Finance, 2018; and RDN analysis.

Vacancy Rates and Household Sizes

Figure 7 charts California's rental and homeowner vacancy rates and average household size since 1990. The rental and homeowner vacancy rates generally move together, though the rental vacancy rate tends to be higher and more variable. Both vacancy rates have trended downwards since 1990; in contrast, the average household

size is trending upwards. Furthermore, household sizes and vacancy rates tend to move inversely such that household sizes decrease during economic expansions but increase during recessions and during periods of more rapid increases in housing costs.

As previously mentioned, household sizes are increasing in California despite a downward trend nationally. There are both demographic and economic reasons for this divergence, including the age and ethnic composition of California's household population relative to the rest of the U.S. as well as differences in housing affordability. For example, while Hispanic household sizes in California have grown smaller in recent years, they are still about 1.1 persons larger on average than the state's Non-Hispanic households, and have been the main driver of California's population growth in recent decades (IPUMS-CPS, 2017). In this context, Hispanic households are those in which the householder who owns or rents the home identifies as Hispanic, defined as any person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.

According to data from the Current Population Survey (CPS) conducted by the Bureau of Labor Statistics (BLS) and the Census Bureau, the Hispanic share of California's population grew by 13.3 percentage points, from 25.3 percent to 38.6 percent, between 1990 and 2017, compared to an increase of 8.9 percentage points, from 6.2 percent to 15.1 percent, in the rest of the country. The relative increase in the Hispanic population in California explains part of the difference in the trends in household size between California and the rest of the U.S.



Figure 7: Vacancy Rates and Average Household Size, California, 1990-2017

However, our analysis of the American Community Survey (ACS) data shows that recent household sizes tend to be larger in California even after controlling for the effects of demographic variables like age, race, and ethnicity. This suggests that economic or geographic factors may also impact household size, though the direction of these impacts may vary. For example, research by Dettling and Kearney (2014) found that increases in metro area housing prices have had mixed impacts on the fertility rates of homeowners versus renters. Existing homeowners, who benefit from higher home values, exhibited higher fertility rates during periods of home price growth, whereas renters, who faced higher costs, had lower fertility rates. Unemployment and general changes in living costs may also have mixed impacts on household sizes. On one hand, unemployment and/or higher living costs can increase household sizes if young adults choose to live with family or with roommates rather than on their own (Fry, 2016). On the other hand, a decline in affordability can also lower average household sizes if they delay couples' decisions to have children or prompt larger-than-average families to move out of the area.

Sources: California Department of Finance, 2018; U.S. Census Bureau, 2018; and RDN analysis.

Net Migration

Figure 8 charts California's annual population growth rate and components of change from 1991 through 2017, including net domestic and foreign migration as well as natural increase (resident births minus deaths). California's population has expanded every year during this period, with growth rates between 0.6 percent and 2.1 percent annually (California Department of Finance, 2018). Population growth slowed during the state-wide recessions of the early 1990s and 2001 (see Figure 1) and has since stabilized in the range of 0.7 percent to 1.0 percent per year. The state's pace of population growth recorded just a modest dip in 2008 in response to the most recent recession. Natural increase—the excess of births over deaths—has been a positive contributor to state population growth in every year since 1991 (blue bar segments in Figure 8). Likewise, net immigration from abroad has contributed positively to population growth in each of these years. That is, the number of new residents added as immigrants to the state from other countries has always exceeded the number of Californians emigrating out of the U.S. in the past 27 years.



Figure 8: Population Growth and Components of Change, California, 1991-2017

Notes: The stacked bars correspond to the right axis and show the annual flows in California's population by component of change from the previous year, including net domestic migration, migration from abroad, and natural increase (in-state births less deaths). The orange line (left-axis) indicates the overall annual population growth rate.

Sources: California Department of Finance, 2018; and RDN analysis.

Net migration between California and the rest of the country presents a contrasting picture. In every year but three since 1991, more Californians have moved out of the state for other parts of the nation than out-of-state residents have moved into California. In Figure 8, note that the green bar segments extend below the horizontal axis in each year except 1991, 1999, and 2000. In particular, the years 1999 and 2000 marked the peak of the "dot.com" expansion (see Figure 1) when state economic growth was exceptionally strong compared to the rest of the country.

Net out-migration from California was particularly large in the mid-1990s following the decline in aerospace and military activity in the state. Net out-flows of population were much smaller during the strong growth years of the late 1990s, and remained small during the 2001 recession. Net out-migration surged again in the mid-2000s

before abating in 2011-2014. It is likely that employment opportunities and relative living costs in California were primary drivers of these fluctuations, but the overall pattern of net population out-flows is unmistakable.

In short, on a net basis, during the past 27 years Californians tended to move out of state, being more than replaced by babies and immigrants from abroad, so that population expanded every year despite the net outmigration to other parts of the nation. Put another way, population expansion since 1991 would have been much greater had so many Californians not chosen to move to other states.

Figure 9 uses Internal Revenue Service (IRS) data between 2011 and 2016 to break this trend down by age and income groupings. Note that the only age groups for which there was measurable net in-migration from other states to California were for persons younger than 34 years of age. Within this age segment, net migration was negative for persons earning less than \$50,000 annually and only turned positive for earners above this threshold. This pattern is exemplified by recent trends reported by the Wall Street Journal (2018) for San Francisco's Market Street corridor. In essence, as older, lower-income households move out of the Market Street neighborhood, they are replaced by younger, wealthier individuals and households. This has been the California story state-wide.



Figure 9: Net Domestic Migration Rate by Age and Income, 2011-2016

Notes: The net domestic migration rate is defined as the net number of migrants per 1,000 population who moved to California from another state between 2011 and 2016, divided by the average population in California during the same period. The estimated number of domestic migrants out of or into California is derived from the number of persons who filed tax exemptions with the IRS in a different state the following or preceding year, respectively.

Sources: Internal Revenue Service, 2017; and RDN analysis.

Housing Costs and Affordability

Current Sales Prices and Rents

Figure 10 shows the annualized median sales price in 2017 for the nation and 20 largest U.S. metropolitan areas by population. These data include home prices in both the urban core as well as the suburbs of each metro area. Three of the top five most expensive metros are in California. Single-family houses in the San Francisco Metropolitan Statistical Area (MSA) are by far the most expensive of the largest metro areas: they are twice as

expensive as the runner-up (Los Angeles), and more than four times the price of many other large MSAs. Condos or co-ops in the San Francisco MSA are also much more expensive than all other displayed areas. Except for New York, single-family houses are more expensive than condos or co-ops in all displayed MSAs, though prices of the two home types are comparable in Boston. The national average sales price of both single-family houses and condos/co-ops sits near the middle of the largest MSAs.





Note: Metro areas reflect Metropolitan Statistical Area (MSA) definitions as determined by the Office of Management & Budget (OMB). The names are shortened to preserve space, i.e. "San Francisco, CA" represents the "San Francisco-Oakland-Hayward, CA MSA." *Data for the New York, NY metro are from Zillow; all other data are from Redfin. Each bar represents the 2017 average monthly median sales price weighted by each month's share of total annual home sales.

Sources: Redfin, 2018; Zillow, 2018; and RDN analysis.

While these averages give an idea of the housing prices residents face in urban areas across the country, it is important to note that the data are influenced by both housing sales counts and prices in urban cores as well as suburbs in each metro area. Some metro area housing markets are much larger and less uniform than others. This can be seen in the differences in estimated population (as of July 2017) across the displayed metros, ranging from 2.8 million in the Baltimore-Columbia-Towson, MD metro area to 20.3 million in the New York-Newark-Jersey City, NY-NJ-PA metro area (U.S. Census Bureau, 2018). The most extreme manifestation of this composition factor is the finding that single-family houses are cheaper than condos or co-ops in New York City.

This is likely a result of a higher concentration of condos and co-ops in more expensive areas of the MSA, while single-family houses tend to be found in the (relatively) cheaper and extensive suburban areas.





Note: Except for single-family houses in the New York, NY MSA, all data are monthly median metro-level rent prices, averaged evenly across the year (2017). *Data for single-family homes in the New York MSA are estimated based on county-level rents (excluding Suffolk County) weighted by the county's share of single-family residential housing units in the MSA.

Sources: Zillow, 2018; U.S. Census Bureau, 2018 and RDN analysis.

Figure 11 plots the annual average median monthly rent in 2017 for single-family and multi-family units in the nation's 20 largest metro areas. The rent rankings are similar to the sales price rankings (Figure 10): San Francisco is the most expensive, Detroit is the cheapest, and three of the top five most expensive metros are in California (San Francisco, Los Angeles, and San Diego), plus another in the top ten (Riverside). The largest difference between the sales prices and rent rankings is Boston, which has the third most expensive rents but the sixth most expensive home prices, and Phoenix, which is the second cheapest metro by rent, but the fifth cheapest metro by sales price. Although there is still a great deal of variation in rents within and between metros, the values are not as dispersed as sales prices. Additionally, for many metros, the percentage difference in rent between single- and multi-family dwellings is smaller than it is for sales prices. As with the sales market, one must be cautious about drawing conclusions about the observed differences or similarities in rent between areas. Composition issues are likely in play in the rental market as well as in the for-sale market; for example, single-family dwellings in the sales market may be systematically different from single-family dwellings available for rent.

There may also be a wide gap in housing quality among metros. For instance, San Francisco is expensive, but its one-bedroom apartments are also more likely to have been renovated and have more desirable amenities than one-bedroom apartments in Detroit.

Ultimately, home prices are the result of supply and demand forces. When demand outpaces supply, home prices and rents increase. Demand for housing is driven in part by quality-of-life amenities, and affording such increasingly expensive amenities requires higher incomes, greater wealth, or both. If incomes depend on productivity, higher housing costs may reflect the earnings impacts of higher productivity (Albouy, 2016).

Household Income

As discussed previously, the growth in California's real GDP per capita relative to that of the rest of the country has fluctuated over time, at times exceeding the national trend, and at times falling behind it. While GDP is a broad economy-wide measure, family living standards are more closely measured by inflation-adjusted (real) household income levels. Data on personal and household income are available from the ACS at a more granular level, allowing for a closer look which may reveal differences in the outcomes experienced by different people within an area (such as the state or the nation) that are often masked by broad averages.

Using data from the ACS for 2000 and 2016, and regression analysis to separate the effect of time from other factors, we compared real personal incomes for individuals in different age groups in California and in the rest of the country. The comparison of real incomes by age was controlled for gender, race, marital status, occupation, and level of education. This analysis reveals that, after controlling for these other factors, the average real income by age was essentially the same in 2016 as it was in 2000, both in California as well as in the rest of the country (see Figure 12). These age-income profiles are also consistent with the observed higher real incomes in the state compared to the rest of the U.S.





race, marital status, occupation, and level of education.

Sources: IPUMS-USA, 2017; and RDN analysis.

Housing Affordability

Figure 13 plots the trend since 1990 in California's nominal housing costs versus incomes. The trend in sales prices is based on the Federal Housing Finance Authority's (FHFA) Housing Price Index (HPI) for California whereas the trend in rents is approximated by weighting the BLS "Rent of Primary Residence" Consumer Price Indices (CPI) for the LA, SF Bay, and San Diego metro areas by each area's household population. The trend in income between 1990 and 2016 is based on the Census Bureau's state-level estimates of nominal median household income (the 2017 data are not yet available). All data are indexed relative to 1990 to compare their cumulative changes over time. Note these changes are also nominal and thus do not account for inflation. For reference, Figure 13 also includes vertical bars indicating periods of U.S. recessions.





Note: The FHFA Housing Price Index (HPI) includes all transactions (sales prices and appraisals). The state-level Rent of Primary Residence CPI is an average of the metro-level indices for Los Angeles, San Francisco, and San Diego, weighted by their household population. All values are nominal and indexed relative to 1990.

Sources: U.S. Census Bureau, 2017; Federal Housing Finance Authority, 2018; U.S. Bureau of Labor Statistics, 2018; National Bureau of Economic Research, 2018; and RDN analysis.

California's nominal median household income doubled (increased 100 percent) between 1990 and 2016, including a short dip following the 2007-2009 recession. However, over the same period, sales prices increased approximately 146 percent and rents increased 132 percent. The cumulative result is that, during the last 25 years, housing has become less affordable for the typical household in California, especially for renters and first-time homebuyers. In contrast, existing homeowners would presumably benefit from the increase in sales prices when they sell their home and could apply those gains to the purchase of a new home.

The share of household income that an average household spends on housing costs is an often-cited measure of affordability. Using ACS data, we divided households into four groups according to income quartiles, and estimated the average share of household income spent on rent for renters in each income group. The bottom income group includes households with incomes in the bottom income quartile. The lower-middle group includes households with income quartile and the median income. The upper-middle group

includes households with incomes between the median income and the upper income quartile, and the top income group consists of households with incomes in the upper income quartile.

Figure 14 charts the average share of income spent on rent and utilities for each income group in California and in the rest of the United States between 2000 and 2016. The data reveal two clear patterns. First, across all income groups, California households spend a larger share of their incomes on rent and utilities than other U.S. households. Second, both in the state as in the rest of the country, the share of income spent on rent and utilities decreases as income rises. The lowest-income households spend significantly larger shares of their incomes on housing than all other groups, and these shares have increased over time. As of 2016, renters in the lower-middle quartile spent approximately 30 percent of their income on rent and utilities. Households in the bottom quartile spent approximately 50 percent of their income on rent and utilities.







Sources: IPUMS-USA, 2017; and RDN analysis.

Regulation

We compiled evidence of the impact of land regulation on the housing market by combining home value data from Zillow (2018) with indexed data from a nationwide survey of local land use control environments called the Wharton Residential Land Use Regulation Index (WRLURI). This index is composed of ten sub-indices aimed at capturing different aspects of the stringency of local regulatory environments across communities all over the country (Gyourko, Saiz, & Summers, 2008). Although these data are now 10 years old, the patterns they reveal are still informative. Figure 15 presents the weighted-average sub-indices for California cities as compared to non-California cities. Larger index values correspond to more stringent regulation. California's values at the time the survey was conducted are larger than the average for the rest of the nation in all but two sub-indices, the Local Zoning Approval Index, and the Density Restrictions Index.



Figure 15: Wharton Residential Land Use Regulatory Sub-indices, 2008

Notes: The Wharton Residential Land Use Regulation Index is a broad measure of a jurisdiction's regulatory restrictiveness with respect to residential development. It accounts for variables such as the extent to which residents, politicians, and courts may impact development, the number of regulatory bodies/layers of approval required, and the typical length of time between a project's application and approval. At the state level it is composed of ten sub-indices.

The WRLURI for the weighted average of California cities is estimated at 0.54, compared to -0.15 for the weighted average of cities in the rest of the country. Note that the WRLURI is standardized to have a mean of zero (negative values are associated with less stringent land-use regulation than average while positive values are associated with more stringent regulation than average). As shown in Figure 16, the index positively correlates with home value appreciation when viewed at the individual metro level, with many of the metro areas characterized by high land-use regulation and high home value appreciation being located in coastal California. According to the Handbook of Regional and Urban Economics (Gyourko & Molloy, 2015), both theory and empirical evidence point to the costs of regulation largely exceeding the benefits, although it is challenging to determine exactly who the winners and losers of different regulations are.

Compounding the effects of restrictive land-use regulation, California voters approved a ballot measure in 1978 (Proposition 13) that capped property taxes at one percent of assessed value and limited the increase in taxable property value to a maximum of two percent each year the property remains in the same ownership. Upon sale of a property or upon completion of new construction, the property is reassessed and the new valuation is used as the baseline taxable property value. Given that many areas of California in general experience year-over-year increases in property values that are well above two percent, homeowners who have held their properties for an extended period pay property taxes that are lower as a percent of market value than homeowners who recently purchased their properties. This creates incentives for homeowners to stay in their properties longer, effectively reducing mobility in the labor market.

Sources: Gyourko, Saiz, & Summers, 2008; and RDN analysis.





Notes: The Wharton Residential Land Use Regulation Index (WRLURI) is a broad measure of a jurisdiction's regulatory restrictiveness with respect to residential development. It accounts for variables such as the extent to which local residents, politicians, and courts may impact development, the number of regulatory bodies/layers of approval required, and the typical length of time between a project's application and approval.

For example, a report for Los Angeles County by the Legislative Analyst's Office (2016) found that property taxes per \$100,000 of market value could range from less than \$200 to more than \$800 within a single zip code. Their report also indicates that wealthier households tend to own more homes, and more expensive homes, disproportionately benefitting from the protections of Proposition 13. Similarly, owners in areas experiencing long-run above-average price increases may, through longer tenure, enjoy higher dollar-amount benefits of Proposition 13 than owners in lower price-growth areas. The higher the home prices, the larger the incentive to stay put. To illustrate, Wasi & White (2005) found that, in response to Proposition 13, average housing tenure increased just 0.11 years in low cost, inland areas of California but as much as two to three years in expensive, coastal areas like the Bay Area. Lastly, the report by the Legislative Analyst's Office suggests that local governments may have shifted to other fees, such as impact fees on new construction, to supplement tax revenues in response to tax-revenue reductions associated with Proposition 13. Moreover, Proposition 58 and Proposition 193, passed in 1986 and 1996, respectively, permit homeowners to pass on property to their children or grandchildren without changing the assessed value. This exclusion for inherited property has further reduced local tax-revenue by several billion dollars each year (Legislative Analyst's Office, 2017).

Data on impact fees have been collected for different jurisdictions and reported at the state level by Clancy Mullen, Duncan Associates for selected years from 2003 through 2015. The survey reports average impact fees assessed in each state for different types of land use. Figure 17 presents a comparison of these data for land

Sources: Gyourko, Saiz, & Summers, 2008; Zillow, 2018; and RDN analysis.

used for single-family housing in California, Florida, Texas, and a combination of all other states reporting impact fees. For all jurisdictions, impact fees are expressed in 2017 constant dollars to have an inflation-adjusted measure that may readily be compared over time. Note data are not available for 2013 and 2014.

Real impact fees in California are consistenly six to eight times larger than those in Texas, two to three times larger than those in Florida, and four to five times larger than the average for all other states. Average real impact fees in California increased substantially since 2003, reaching a peak in 2010.

Figure 17: Average Real Impact Fees, Single-Family Unit Consisting of Three Bedrooms, Two Bathrooms on 10,000 Square Feet Lot Valued at \$200,000, 2003 to 2015



Notes: Annual real average data for California, Florida, and Texas. Unweighted average of state averages reported for all other states. The years 2013 and 2014 are omitted due to a lack of survey data.

Sources: Clancy Mullen, Duncan Associates; and RDN analysis.

There is a positive relationship between impact fees and housing burdens (measured as the share of household income spent on housing costs). That is, areas in which impact fees are relatively high also tend to have relatively high average housing burdens. Much of this positive correlation is driven by California. Since passage of Proposition 13, California municipalities have shifted the source of much of their local infrastructure funding from property taxes to permitting and impact fees. These fees represent a cost to home builders, which in turn translates into higher home prices. In addition, high impact fees represent a smaller share of the cost of building large, luxury homes than they do for more affordable housing units. Builders therefore have an incentive in high impact-fee areas to pursue development of high-priced homes rather than higher-density, more affordable housing.

Additional constraints on the housing market stem from rent control. While rent controls in California have been somewhat restricted by the Costa-Hawkins Rental Housing Act of 1995, there is currently a push to repeal it (The Economist, 2018). According to reporting by the Sacramento Bee (Hart, 2018), activists backing the repeal initiative have collected more than the required signatures to put the measure on the November 2018 ballot. If successful, the repeal of Costa-Hawkins could pave the way for new local measures to reduce the pace of rent increases.

The costs and benefits of rent control measures are continual subjects of debate and research. A recent comprehensive study by a team of researchers from Stanford explores many sides of the rent control debate and focuses on the case of rent controls in San Francisco (Diamond, McQuade, & Qian, 2018). The authors find that the economic benefits of rent control generally go to incumbent occupants at the time a rent control law is enacted and are outweighed by the costs imposed on occupants of non-controlled rental units and new residents moving to the area. A particularly perverse effect of rent control in San Francisco, the authors argue, was the reduction in the rental housing stock due to conversions of for-rent apartments to for-sale high-end condominiums, which avoids the need to comply with rent control measures while contributing to increased gentrification of neighborhoods.

Findings

California's economy has grown rapidly during most of the past 50 years. Real living standards as measured by GDP per capita increased, on average, by 59.5 percent in this time, though median household income has been stagnant since 2000. Both home prices and rents have escalated significantly, and California's principal metro areas are among the priciest in the country.

Appreciating home values generally benefit existing homeowners. Determining the net economic benefits of high home prices and/or quickly appreciating homes, however, is difficult, and as with most things, is a multidimensional problem. Homes represent most homeowners' largest asset. Appreciating home values thereby represent an increase in wealth. This, in turn, allows homeowners to increase spending on other forms of consumption, which is a main driver of economic growth. Similarly, evidence suggests that increasing home values, which gives homeowners more collateral, is associated with a higher probability of entrepreneurship and entrepreneurial success (Schmalz, Sraer, & Thesmar, 2017).

At the same time, high-and-increasing home prices (Zillow, 2018) drive a wedge between homeowners and renters. Davis & Van Nieuwerburgh (2014) show that homeowners have dramatically higher net worth than renters of the same age, and that the net-worth gap between homeowners and renters increases with age through most people's working years. This suggests that the ability to buy a house, something that becomes increasingly difficult with rising home values, may provide better prospects for upward socioeconomic mobility. Meanwhile, increases in home prices also correlate with increases in rental costs, which makes it more difficult for prospective first-time homebuyers to save for a down payment. Increasing housing costs can also lead to gentrification and displacement of current residents who may be priced out of the local housing market.

In terms of regulation, Californians have implemented both state and local measures aimed at minimizing the growth in housing costs for existing residents. As indicated above, Proposition 13 mitigates the cost of housing appreciation on existing homeowners by (1) limiting property tax to one percent of a home's assessed value and (2) limiting the growth rate of a home's assessed value to two percent per year for as many years as the homeowner stays put. Rising home values incentivize lower labor mobility for existing homeowners because their property taxes on long-held residences may be based on a smaller fraction of the market value of the home. Municipal-level rent control laws offer similar protections to renters. However, efforts to limit the growth in housing costs also tend to have the opposite effect for those who do not receive the law's protections.

The pattern of housing costs rising faster than incomes has persisted for several years and will likely continue indefinitely. California's housing market conditions reflect a strong demand for the "quality of life" amenities that much of California offers, and a relatively slow (and sometimes non-existent) response in the development of new housing stock to accommodate the increasing demand. Housing policies and tax reforms designed to alleviate issues with this excess demand have historically shown mixed results in California, improving conditions for some while creating new challenges for others.

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