

# Impact of Recent Rent Increases on Housing Affordability in San Diego

By Steven Trujillo

## I. Abstract

Access to a reasonable housing situation is a fundamental right of every person. The San Diego region has experienced significant rent increases, impacting affordability and access to housing. This study analyzes rent and income data to identify areas with disproportionate rent increases and assess the overall affordability of the San Diego region. This change personally affects me and many other college students in the area attempting to find a place to stay while pursuing our education. As someone who has rented for the past three years, I have seen my rent proceed to increase with each passing year. The approach taken by this study was to gather datasets on the change in rent prices in relation to income from reputable sources such as United States census data, and websites such as Zillow known for displaying market data. With the data, this study analyzes the metrics to better understand if things are moving disproportionately. Key findings suggest disproportionate rent increases to average income and potential inflation of the entire renter demographic in California.

## II. Introduction

Housing is a fundamental human right, yet in San Diego, it is increasingly becoming a privilege. In the past year, my rent has increased by 160\$. If it continues to increase at this rate many students in the area won't be able to attend school here simply due to the rent being too expensive. This report examines the recent spike in rent prices, and its effect on affordability, and identifies neighborhoods where rents are rising disproportionately. It does this through many markers such as the 30% percent rule used on average individual income to determine a baseline of where the rent prices should be given the data [5]. The analysis leverages government-sourced data on rent and income across San Diego neighborhoods. It also leverages data from other sources such as Zillow and Kaggle.

## III. Approach

Starting the project it was clear that data would need to be gathered on rental prices in the San Diego region and income data would also be needed. This was all collected to better answer the question

of whether the rent prices in San Diego were growing inversely to income. Data was sourced from reputable government websites, including Census data on household income, Kaggle for California rental data, and Zillow data on rental prices. Beginning with the Kaggle dataset first, it was examined to make sure it had target information. After initial inspection, it was determined it was displaying rental data on all of California and not just on the San Diego Region. As a result data cleansing was performed using the longitude and latitude metrics in the dataset to restrict it to the San Diego region. After cleaning the data it was plotted to help with visualization of the dataset. Then I was able to calculate metrics from the data such as the average number of rooms, bedrooms, and people per household. With metrics such as these, I built a linear regression model that would take in these values and attempt to predict the median income needed for a house with certain values. This model was important to see where my expected income would be in order to rent my current house. I also used the mean median income, census data income, and census data household income to calculate my expected rent cost per month. When calculating the expected rent cost per month I took into consideration the 30% rule which is a general guideline for determining how much to spend on monthly rent [5]. Moving onto the Census data set on rent information in San Diego after initial inspection it was determined that there was too much inconsistency in the dataset to correct in the jupyter notebook, so it was split into two different datasets with consistent naming conventions then imported into a new pandas data frame. The new datasets were cleaned further and plotted on respective charts such as a boxplot and pie chart for visualization. With the Zillow dataset on housing prices, I gathered multiple popular cities in California through data cleaning. With this I plotted each respective city over the course of 20+ years to better understand how the market has changed and if it is restrained to San Diego. Then with the Zillow dataset on rent prices, it was filtered to only show San Diego and plotted to see the progression of rental prices. A predictive model was built on previous rental data in San Diego and predicted future climbs in rent. After collecting all this data a fully developed picture was created of the current situation.

#### IV. Evaluation

The analysis used regression and descriptive statistics to evaluate trends. Median House Value and Income: The correlation between housing costs and median income was examined. Affordability Index: Rent as a percentage of income was calculated to establish affordability. Comparative Analysis: San Diego's rent increases were compared to other major cities. Using the Kaggle dataset restricted to San Diego the calculated median income came out to 37,650\$ [3]. It also gave median metrics such as the average home having 5.2 Rooms, 1.1 Bedrooms, and 2.8 People in San Diego [3]. Census information gives a median household income of 98,657\$ and a median individual income of 51,368\$ [4]. With this information and the 30% rule, we can calculate your expected monthly rent cost for each of the respective

values as 941.17\$, 2466.42\$, and 1284.2\$ [5]. With the Census data and Zillow rental dataset, the average rental price in San Diego is 2,080\$ and 2,999.84\$ [2], [4]. The obvious analysis of this information is that currently, the average individual would be unable to afford rent in the current economy. Both individual income metrics show that a person would be far above the 30% rule when it comes to monthly rent [5]. Looking at the household income metric they would be able to afford rent based on the Census data, but not the Zillow rental data [1]. This all points to the fact that there is a discrepancy between income and rent prices in San Diego and most individuals would need the support of others in order to afford housing. I later built a linear regression model to determine the median income needed to rent a house using rooms, bedrooms, and people per house metrics to guess the median income. I evaluated the model with root mean squared error and it returned a value of 0.822 which is a good measure of median income as that value is stored in the tens of thousands of dollars. When plugging in the values for the current home I am renting it determined the median income expected would be 88,059\$. As a college student, the value needed to rent this house is outrageous. Living with six other roommates combined doesn't bring in this much money per year. On top of this, it highlights the fact that many college students cram many people into a house in order to attempt to bring rent down to a reasonable price. The Census dataset monthly housing cost section highlights further the problems with rent in San Diego. Nearly half of the population of San Diego rents and 90.3% of those people fall within the 1000 to 3000+ dollar range for monthly rent [1]. Furthermore 76.3% fall within the 1500 to 3000+ dollar range [1]. This highlights the fact that rent in San Diego is inflated using the values we got above most individuals aren't able to afford these rent categories suggesting that most people most likely are splitting the rent with multiple roommates to be able to afford it. In the monthly housing cost in relation to the income dataset, we see that 48.5% of renters make 75,000\$ or more a year and 17.5% make 50,000\$ to 75,000\$ a year [1]. The national average income is 59,384\$ so when comparing this with the income most renters need to survive in San Diego we see a very disproportionate growth between the two [8]. This highlights the fact further that San Diego housing should be made cheaper or the wages of people in the area need to increase. In the Zillow housing prices dataset after graphing multiple cities within California to see the progression of housing prices, this study found most cities experienced exponential growth in terms of housing [2]. This could suggest that prices in California as a whole have been increasing and it isn't isolated to San Diego only. The last dataset this study looked at was the Zillow rental price dataset in that it was filtered to only view the progression of San Diego rental prices over 9 years [2]. With a predictive model built around the data, it determined that housing prices would only continue to increase at an exponential rate. Looking at the graphs of the increase in rent there was a noticeable shift in the slope around 2020 to 2021 [2]. Diving deeper into this revealed that during COVID-19 there was a large increase in the population of San Diego due to remote working and while rent temporarily decreased it quickly went back up [6]. On top of this,

the rate at which housing is created is slower than the population growth, combined with investors buying up all the properties for short-term rentals [6]. All this combines to create the current housing crisis where the available houses are not affordable for most people.

## V. Conclusion

This detailed report has critically examined the dynamics of rental prices in the San Diego region, utilizing a combination of regression analyses and descriptive statistics to comprehensively understand the housing market. The analysis has underscored a substantial misalignment between median incomes and rental prices. Despite the median household income being relatively high, the average rental costs from the Zillow dataset indicate that a significant portion of individuals and families would struggle to afford housing without exceeding the recommended 30% rule [2], [5]. This is concerning for below-average to average earners and impacts students and early career professionals who typically earn below the median. The regression model developed during the analysis to estimate the necessary median income for various housing configurations highlighted an income requirement far exceeding what is typically earned by people pursuing an education. This demographic, including myself and my peers, often resort to living with multiple roommates in an attempt to reduce unaffordable rent costs. Comparative analysis with other major cities in California has revealed a statewide trend of rapidly increasing housing costs, suggesting that the issue is not confined to San Diego but is indicative of a broader regional challenge [2]. This exponential growth in housing costs is corroborated by the rise in housing prices post-2020, influenced by factors such as increased remote working and investor activity in the housing market [6]. The study found a noticeable increase in rental prices coinciding with the COVID-19 pandemic, which brought an influx of residents to San Diego, attracted by the possibility of remote work in a nice environment [6]. This sudden population increase, coupled with a decrease in the rate of new housing developments and a surge in short-term rental investments further inflated rental prices [6]. The current state of the housing market in San Diego calls for immediate and effective policy interventions. Potential adjusting wage standards to more accurately reflect the cost of living could provide essential relief for renters. Also, the creation of the Tenant Protection Act in recent years responds to the current issue by limiting the amount a landlord can raise the rent in a given year [7]. Continued monitoring of housing market trends and the impact of implemented policies will be crucial. This report not only sheds light on the challenges faced by residents of San Diego in obtaining affordable housing but also highlights the need for a diverse approach to address these challenges. The findings underscore the necessity for concerted efforts from all stakeholders, including government agencies, community leaders, and residents, to create sustainable solutions that will ensure the fundamental human right to housing is maintained.

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