

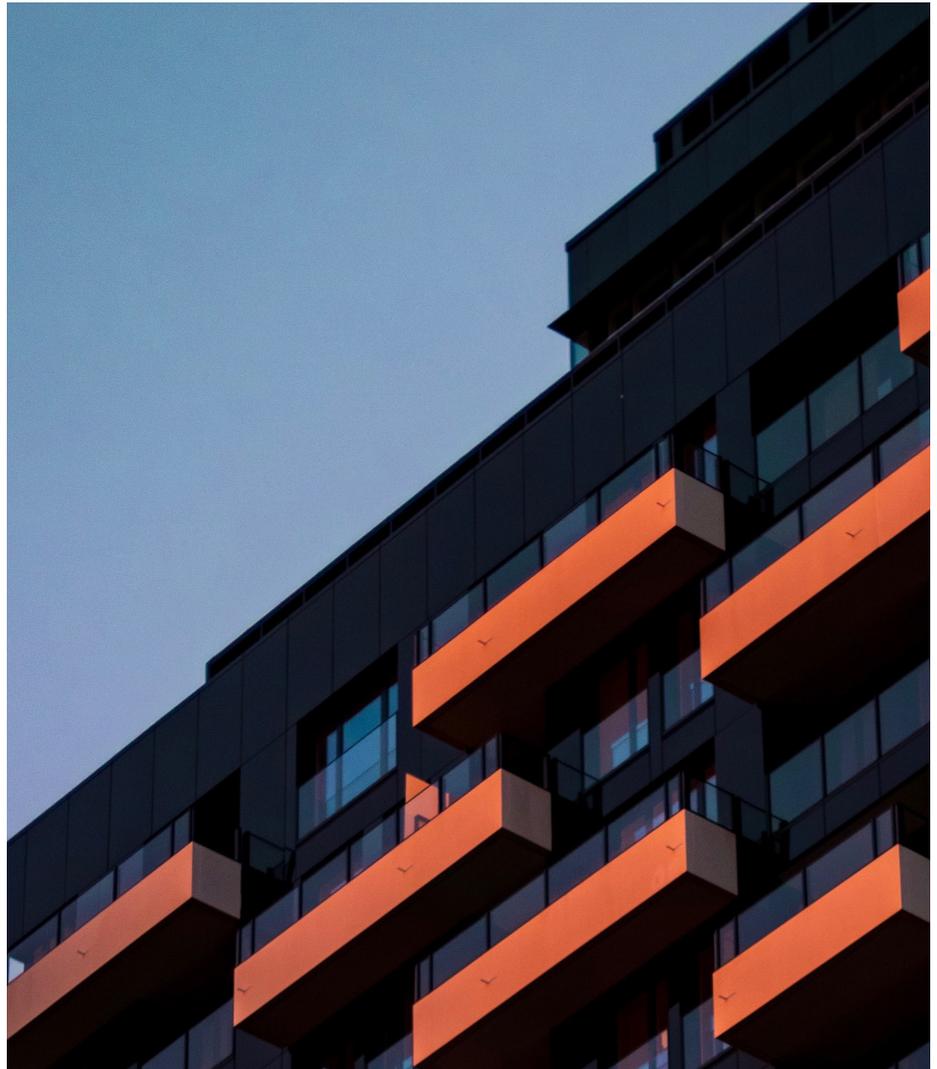


UHERO

THE ECONOMIC RESEARCH ORGANIZATION
AT THE UNIVERSITY OF HAWAII

WHY ARE CONDOMINIUMS SO EXPENSIVE IN HAWAII?

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1. INTRODUCTION

The median sale price of a new two-bedroom condominium in Hawai'i is about \$670,000, more than double the price in the average state. In this report, we try to determine why new condominiums are so expensive in Hawai'i. We break down the costs involved in producing condominiums to better understand the causes of high prices.

Two common explanations for the high cost of new housing in Hawai'i are (1) the high cost of land and (2) the high cost of construction materials and labor. We evaluate these explanations using data on land prices and construction costs across the nation. We find that Hawai'i has both the highest land costs and highest construction costs of any state in the nation. However, after these factors are accounted for, the price of a new condominium in Hawai'i is still unusually high. We discuss the importance of a third cost, which is embedded in the price of housing: supply restrictions imposed through government regulation.

High housing prices should provide strong incentives for developers to expand housing supply. However, regulatory barriers prevent a supply response. Hawai'i has the [most restrictive housing production laws in the nation](#). The extreme constraints on housing construction result in few units being completed, which artificially lowers the supply of housing and drives up prices.

We propose a method to break out the component costs of multifamily housing into three categories: land costs, construction costs, and regulatory costs. While all three components contribute to Hawai'i having above average multifamily housing prices, we find that regulatory costs are by far the most important, and make up **over half** of the market price of a new condominium. Reducing the regulatory costs of multifamily housing production could significantly lower market prices, which could have large welfare benefits for residents struggling with housing affordability.

Condominiums can provide a point of entry into the housing market for new households. Without a flow of condominiums, households compete for what scarce housing is available, pushing up prices in the condominium and single-family markets alike. Meeting Hawai'i's housing needs requires a significant amount of new housing supply, which could be realistically provided through multifamily housing development.

2. METHODOLOGY

In a well functioning competitive market, the price of a good will equal the marginal cost of producing that good. If something can be sold for more than it costs to produce, producers will rush to make more, sell the good at a high price, and pocket the difference as profit. Typically, this state of affairs can't last long. As more of a good is produced, the good becomes less scarce and the price falls. Eventually the price will be pushed all the way down to the cost of production. This is a basic description of supply and demand forces, which also forms the basis for our methodology.

Without regulations to artificially suppress supply, developers would happily provide condominiums in large quantities and sell them at a profit. Over time, the condominium market would become saturated and prices would fall until they reached the marginal cost of producing a condo unit. Whenever prices rose above production costs, developers would rush in and build condos, forcing the market price back down until the opportunity for profit disappeared. We therefore adopt the following premise: In the absence of any regulation, the market would provide condominiums that are priced at the marginal cost of production, which includes land costs and construction costs.¹

¹ In the current market, the cost of producing a unit of housing is significantly higher than the marginal cost of production because of factors including development fees, building restrictions, developer profits, and permitting delays. Under a hypothetical scenario of no regulations, we assume these costs would fall to zero. In this sense we adopt a very broad definition of "regulatory costs," which includes anything that raises production costs above the price of land, materials, and labor. Our approach is based on prior economic literature, particularly Glaeser and Gyourko (2003), *The Impact of Building Restrictions on Housing Affordability*.

In this report, we measure the gap that exists between the market price of new multifamily housing and the costs to produce new multifamily housing. The gap is equal to the difference between the actual market price of a new condo and the marginal cost of producing that condo. We refer to this gap as the **regulatory cost**.

$$\text{Condo Price} = \text{Land Cost} + \text{Construction Cost} + \text{Regulatory Cost}$$



$$\text{Regulatory Cost} = \text{Condo Price} - \text{Land Cost} - \text{Construction Cost}$$

By using data on condo prices, **land costs**, and **construction costs**, we can generate an estimate of the **regulatory cost**. We complete this calculation across all US states, which allows us to compare regulatory costs across the country.

The regulation of housing production can serve important public purposes; including environmental preservation, infrastructure management, and neighborhood preservation. Therefore, the choice to allow more condominium construction presents policy tradeoffs. While more housing supply would lower housing costs, it would also change the characteristics of the places where the housing is built, in ways that some might find undesirable. New construction would also require the government to provide the infrastructure needed to support that housing. The purpose of this report is to quantify the costs of restricting housing supply, so those costs can be weighed against any benefits of the regulations. The optimal level of regulation is ultimately a policy choice that must make a trade-off between the benefits of new housing and the costs of allowing more development.

There are two reasons why we focus this report's analysis on new, multifamily housing. The first reason is methodological; we know what the marginal cost of production should be for a condominium unit. In physical terms, a condominium can be considered as a standardized good that requires a combination of building materials, labor, and land, all of which have observable market prices. In contrast, single-family homes are far more idiosyncratic, and their price is largely determined by the price of the land under the structure. Land prices are themselves a result of land use designation and housing market regulation. Reducing regulatory barriers to housing could lower home prices by expanding housing supply, but could also raise land prices by improving the development prospects of land. For large-condominium buildings, land costs end up being a small share of the overall costs of production, as we show below, so the implications of reducing land use regulations are more clear when considering the multifamily market.

In the next sections, we describe how we obtain the three data points needed to complete the analysis. We then compute regulatory costs and compare Hawai'i to other states in the US.

3. DATA

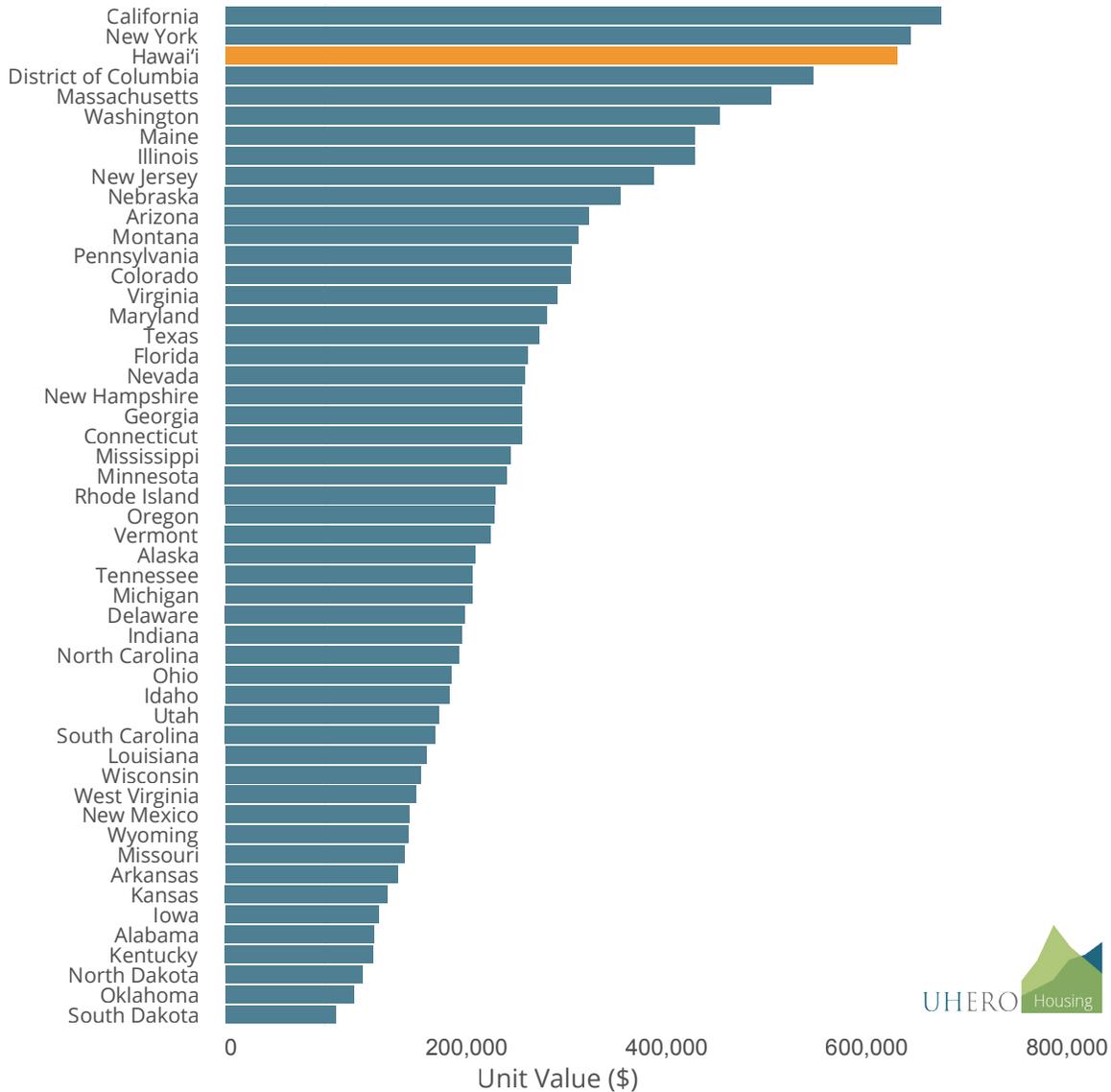
3.1 PRICE OF A NEW CONDOMINIUM UNIT

We estimate the price of a new condominium across states using data from the US Census Bureau. The American Community Survey asks respondents to report the value of their home, as well as characteristics of the housing unit, including whether it is part of a multifamily building. We select every respondent from 2017–2021 who reported living in a condominium that was constructed in 2010 or later. We exclude units in duplexes, considering only units from multifamily buildings with at least three units. Using this data, we estimate the median value of a new, two-bedroom condominium unit in each state.²

² We normalize all home values to approximate the value of a two-bedroom unit. Using regression analysis, we estimate the average price effect of adding an additional bedroom to a unit's price. We find, across the US, adding an additional bedroom increases a unit's price by 12%, on average. We adjust prices for every observation by adding 12% for each bedroom below two, or subtracting 12% for each bedroom above two. The method allows median unit prices to be comparable across states by accounting for differences in unit size. We adjust all prices for inflation to reflect 2023 dollars.

A new two-bedroom condominium in Hawai'i has a median price of \$672,000, placing Hawai'i third, behind California (\$715,000) and New York State (\$685,000). In the average US state, a new two-bedroom condo is valued at \$300,000. For the price of one new condo in Hawai'i, a buyer could afford two condos in the average state, or roughly six condos in the cheapest state.

Median New Condominium Value



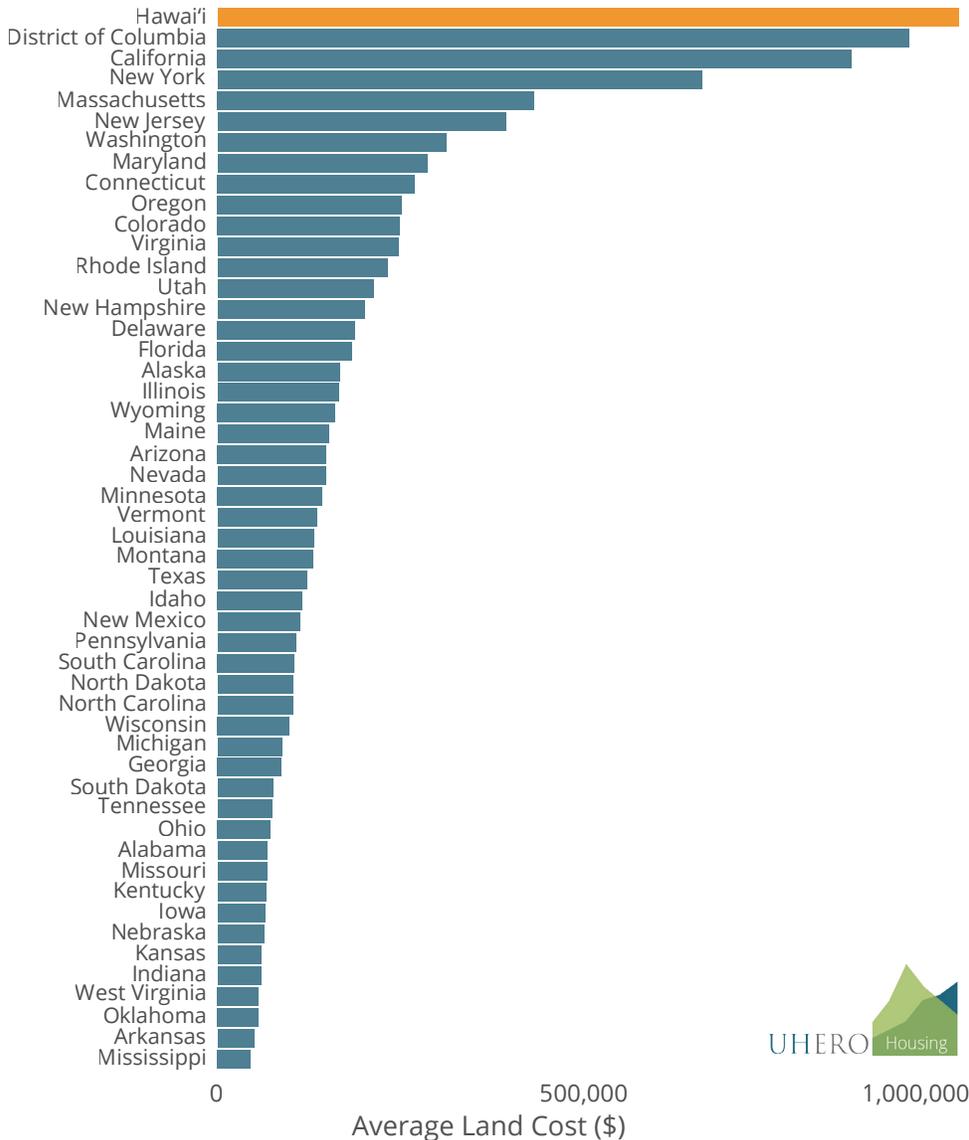
Caption: The median price of a new condominium in Hawai'i is \$672,000. Only California and New York State have higher prices. Prices are based on ACS data from 2017 to 2021 for units constructed in 2010 or later, adjusted to 2023 dollars.

3.2 LAND COSTS

Given Hawai'i's unique island geography, the availability of buildable land is naturally constrained relative to other states. Scarcity of land can lead to higher land prices. However, regulatory limits on where multifamily housing can be constructed is potentially the more important constraint. Building housing is not legally permitted on 96% of land within the state. Within areas where residential development is allowed, 93% of the land is restricted to single-family only, meaning multifamily housing is disallowed on 99.7% of land. These regulations drastically limit the ability to construct multifamily housing.

Because the locations where multifamily housing can be built are so limited, condominium developers bid up the price of these scarce plots. We are interested in estimating the price of land, in a hypothetical scenario where regulations prohibiting multifamily housing were removed. Therefore, we use land cost estimates from single-family zoned residential land, which could be used for multifamily construction if regulations were liberalized.

Average Land Cost per Half Acre



Caption: The average market price for a half-acre of residential land in Hawai'i is \$1.15 million, the highest in the nation. We use pooled cross-sectional data over the period 2012 to 2019, adjusted to 2023 dollars.

Residential land prices are estimated using data from the Federal Housing Finance Agency (FHFA).³ The FHFA provides estimated average land prices for a standardized, single-family zoned, quarter-acre lot across every state.

In our main analysis, we consider multifamily structures that could be built on half-acre plots of land. In the figure, we show the average cost of purchasing a half-acre of residential land across all 50 states and DC. Residential land prices in Hawai'i are the highest in the nation, valued at \$1,150,000 per half-acre, nearly 5 times the national average.

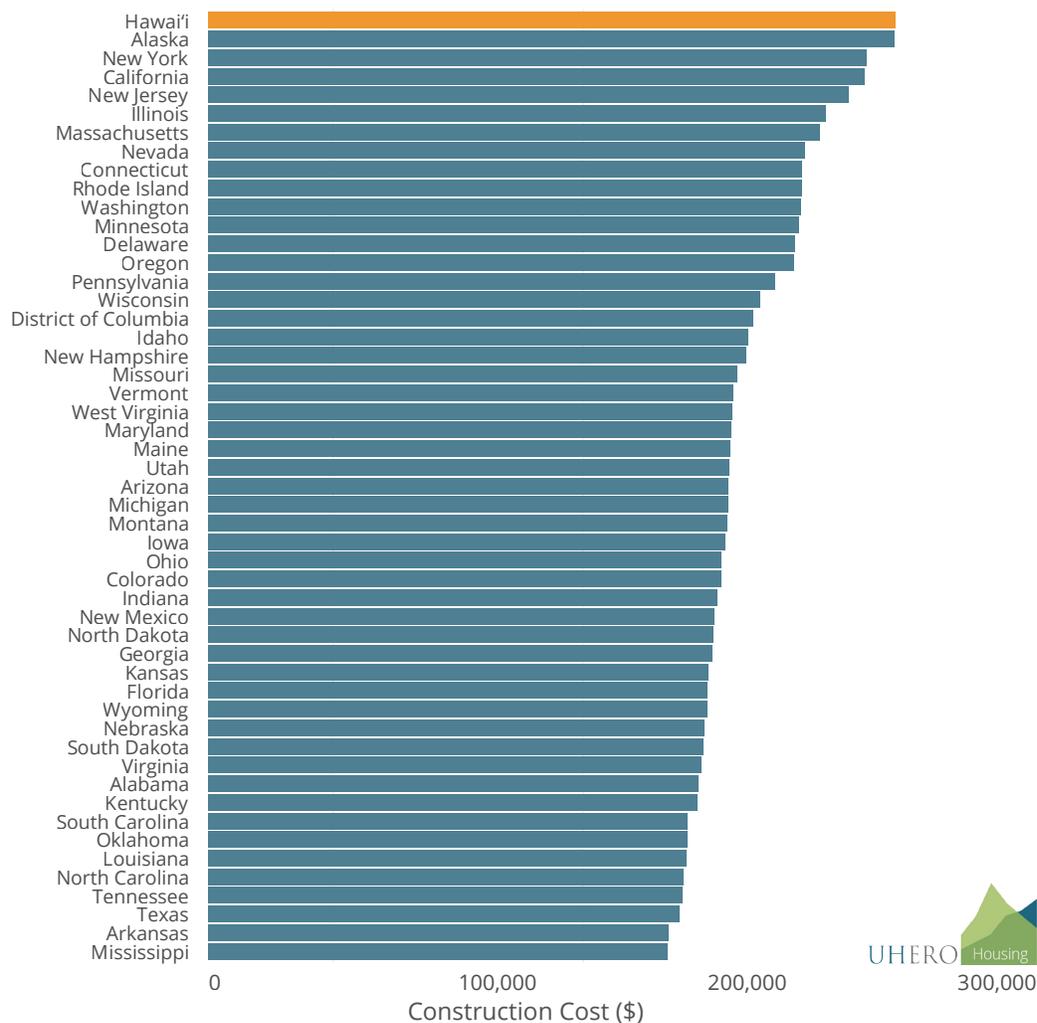
³ [The Experimental Dataset for the Price of Residential Land](#), compiled by the Federal Housing Finance Agency, measures land under single-family structures between 2012 and 2019 with appraisals from the Uniform Appraisal Dataset and CoreLogic. Prices are adjusted to 2023 dollars.

3.3 CONSTRUCTION COSTS

We use data from RSMMeans, a construction industry data provider, to estimate the cost of constructing a condominium. RSMMeans is a project budgeting service that models construction costs based on material, labor, and equipment cost estimates using data from local markets.

For our calculations, we consider a 15-story building with 144,000 square feet of livable floor area. To estimate costs per household, the building is subdivided into 120 units of 1,200 square feet each. We assume unionized labor and take the average cost across minimum and maximum wall and framing material costs.⁴ For this cross-state comparison, we do not include costs of complying with regional construction codes or zoning codes, as we consider these an aspect of regulation. We estimate average building costs for 651 regions in the US, then take a population weighted average of construction costs for each state.⁵

Construction Cost per Unit



Caption: Hawai'i has the highest condominium construction costs in the nation. The estimated construction costs for a two-bedroom condominium unit in a 120 unit building in Hawai'i is \$275,000. Costs reflect Quarter 1 of 2023.

⁴ RSMMeans cost estimates are based on fixed combinations of wall and framing materials. We take an average cost across two material combinations: (1) exterior insulation finishing system (E.I.F.S.)/rigid steel and (2) precast concrete/reinforced concrete. Further details on the RSMMeans methodology is available [here](#).

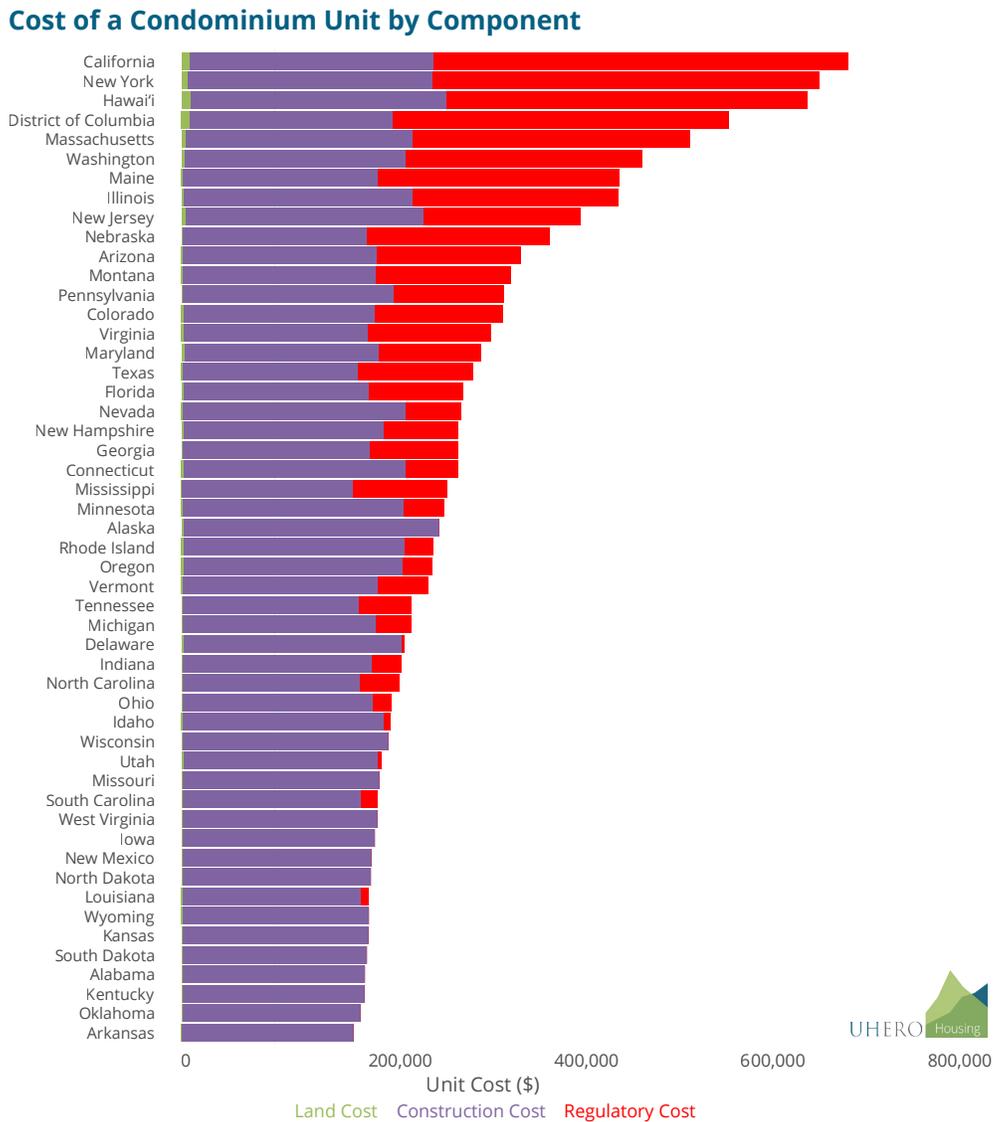
⁵ Since geographic regions for cost estimates are approximated by three-digit zip code prefixes, we use Zip Code Tabulation Area (ZCTA) population estimates from the 2020 Decennial Census to construct population weights.

Hawai'i has the highest construction costs in the nation. We estimate a per unit construction cost of \$275,000 for Hawai'i, slightly above Alaska (\$274,000). Construction costs in Hawai'i are 28% higher than in the average US state, where a similar unit costs \$215,000 to construct.

4. RESULTS

4.1 REGULATORY COST ESTIMATES

Using the market price of a new condominium unit, we subtract the estimated land costs and construction costs to arrive at our state level estimates of regulatory costs. We estimate that regulatory costs add \$387,000 to the price of a new condominium in Hawai'i, representing 58% of the overall market price.



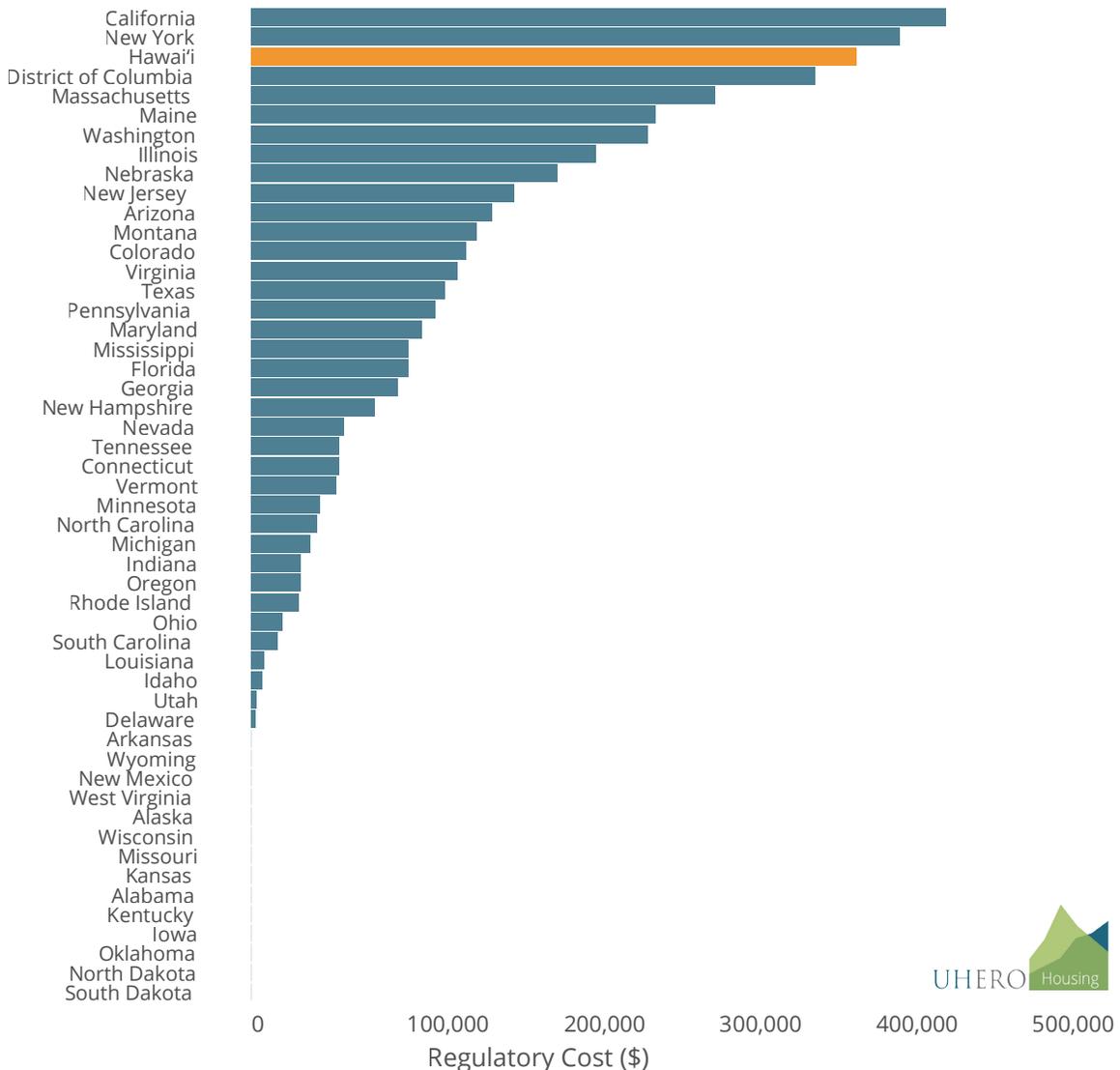
Caption: Regulatory costs make up a large portion of total condominium unit costs in high-demand markets. We estimate regulatory costs comprise 58% of new condominium costs in Hawai'i.

In multifamily construction, the cost of land can be spread across all units in the building, meaning land costs represent a very small portion of the overall price. Although Hawai'i has the highest land prices in the country, only 1.4% of the price of a condominium in a 120-unit structure is attributable to the price of residential land. In the typical budget of

a multifamily project, land costs are more significant, however, this is not due to the scarcity of residential land in general, but to a scarcity in the land where multifamily construction is allowed, which we consider a component of regulatory cost. Construction costs are also highest in Hawai'i, although the difference across states is relatively modest. Labor and material construction costs comprise 41% of the final price of a condo in Hawai'i.

We estimate that regulatory costs in Hawai'i rank third highest in the nation, behind California and New York State. While Hawai'i may have [the most stringent housing production regulations](#) of any state, the demand for condominiums in California and New York State is higher than in Hawai'i. Our estimation of regulatory cost represents how much cheaper housing would be if there was free entry into the market by developers. In the California and New York State markets, the elimination of regulatory costs would have an even greater impact on prices because developers have an even stronger incentive to build in those states.

How much does regulation add to the cost of a condominium unit?

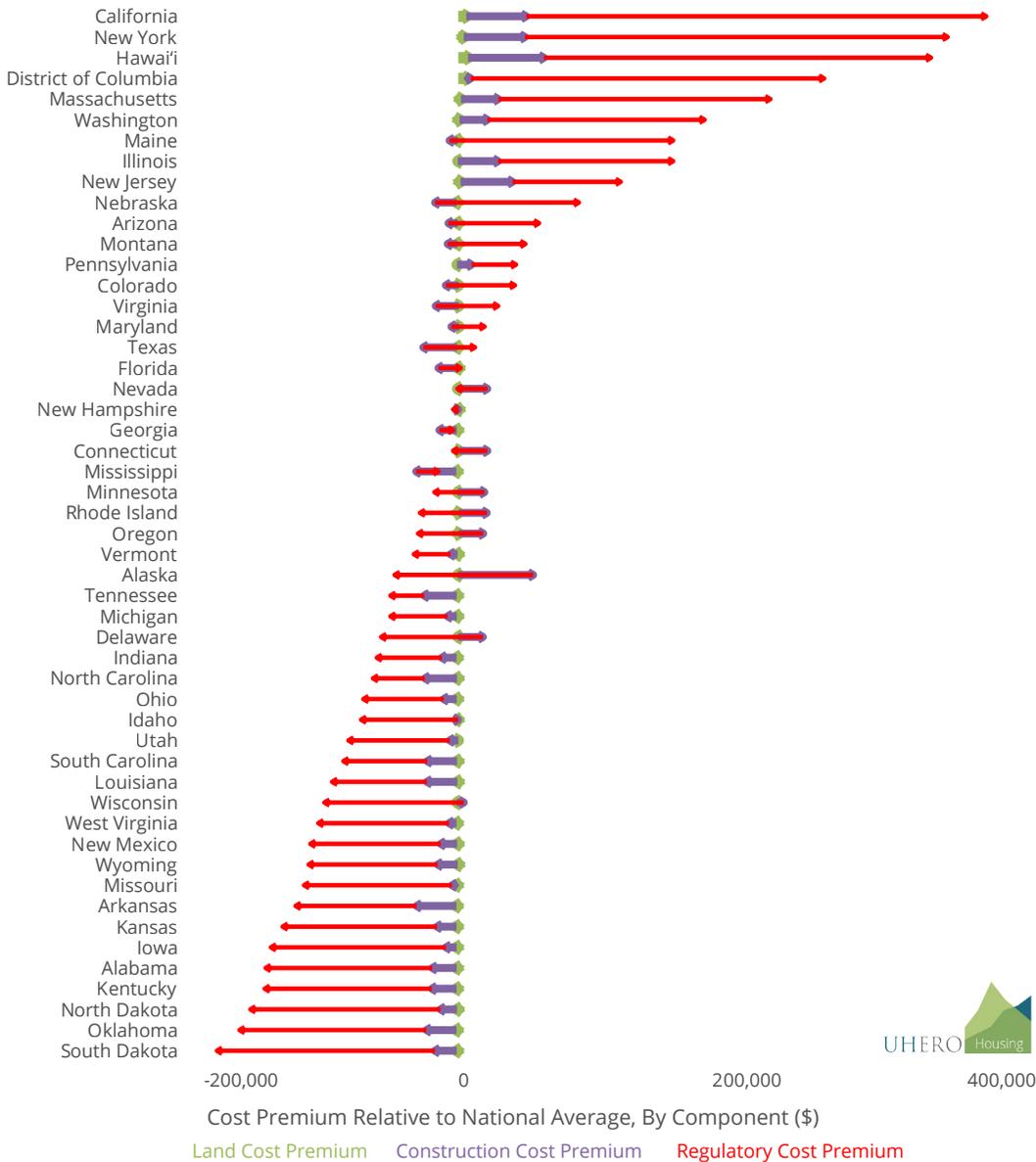


Caption: We estimate regulatory costs add \$387,000 to the price of a new condominium unit in Hawai'i. Only California and New York State have a higher regulatory cost per unit. Several states have no regulatory cost burden because the market price of a new condo is below the cost of production, meaning developers would not provide condos even in an environment with zero regulatory costs.

When a market is experiencing high demand for housing, regulations significantly reduce housing production, which inflates prices. For markets with low housing demand, regulations are relatively unimportant because developers have no market incentive to build multifamily housing anyway, even if there were zero regulatory barriers. We estimate 14 states to have no regulatory costs. On average across these states, developers do not build multifamily housing without subsidies because the cost of producing a unit exceeds the price it could be sold for. Regulations are not costly in these states, because they do not prevent any housing construction. We only capture state averages in this analysis. Regulatory costs could be significant in particular cities, even if the state estimate is zero.

The next graph provides information on how much each of the three cost components contribute to condo prices relative to a state with average land costs, average construction costs, and average regulatory costs. Hawai'i has above average costs for all three components. Higher land costs push up condo prices in Hawai'i by 3% relative to the average state, while higher construction costs push up prices by 20%, and regulatory costs add 101%.

What drives condo price differences relative to the average state?



Caption: Arrows indicate the additional unit cost attributable to each cost component, relative to a state with average land, construction, and regulatory costs. Relative to the average state, higher than average land costs add \$7,700 to the price of a new condo in Hawai'i, higher than average construction costs add \$60,000, and higher than average regulatory costs add \$304,000.

In a [prior UHERO report](#), we examined where Hawai'i ranks in terms of the stringency of housing production laws using the national Wharton Land Use Survey. A higher index score indicates more restrictive housing laws. Analyzing survey data from planning officials showed that Hawai'i has the most restrictive set of housing production laws of any state. In the figure below, we compare the magnitude of the regulatory cost estimated in this report with the survey results. There is a strong positive correlation. States with more restrictive housing laws experience a higher regulatory cost for new condominiums. While California and New York State have less restrictive housing laws than Hawai'i, the extreme demand for housing in these states means that the price effect of regulation is even greater than in Hawai'i.

Added Cost of Regulation vs. Wharton Index



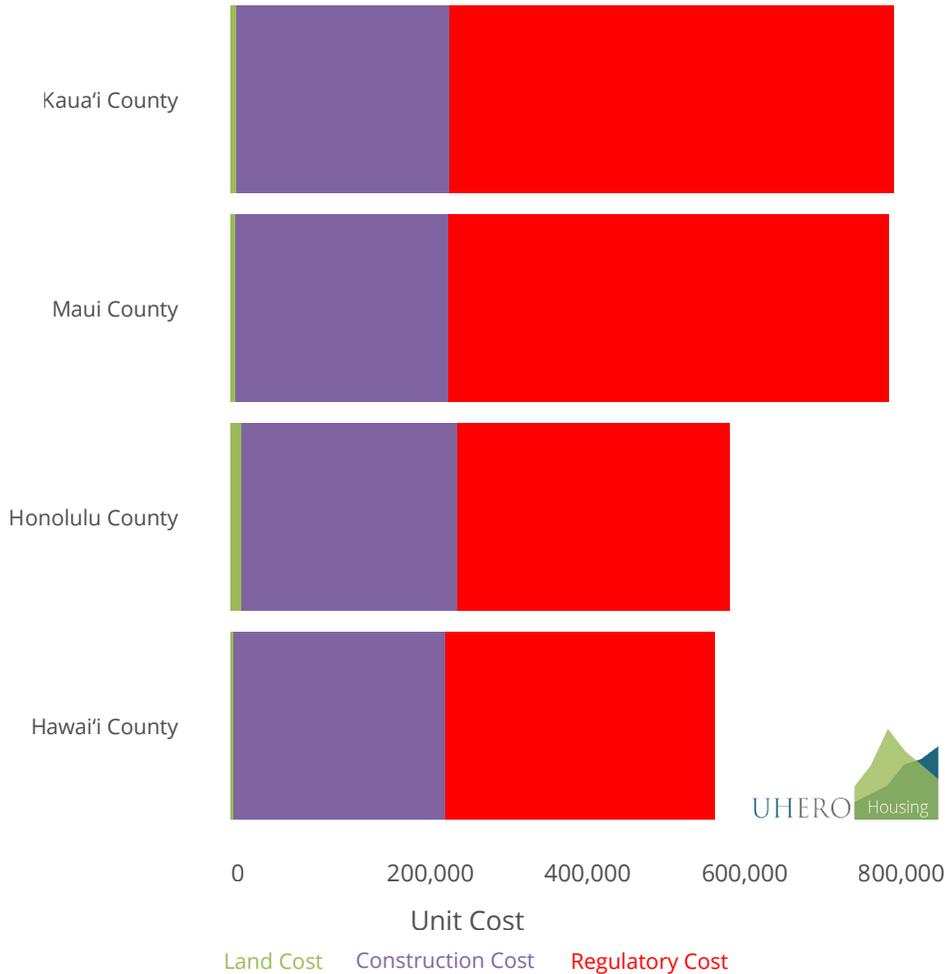
Caption: Hawai'i has the strictest housing production regulations in the nation, according to the Wharton Regulatory Land Use Index. The impact of regulations on condominium prices depends on the level of local demand.

4.2 REGULATORY COST ESTIMATES, BY COUNTY

We estimate that regulatory costs add \$387,000 to the price of a new condominium in Hawai'i, on average. In this section we estimate the cost separately for each county.

We follow the same methodology for county estimates, but make some approximations due to data limitations. The ACS does not provide sufficient coverage to reliably estimate the price of a new condo for each county. We use the state level price estimate, but scale the number based on the general difference in home prices observed among all condominium transactions across counties.⁶ Detailed land price data is available for each county. For construction costs, we use a weighted average of local costs from RSMean, however the data assumes costs are identical on each of the Neighbor Islands.

Cost of a Condominium Unit by Component



Caption: A new condominium unit in Maui or Kaua'i County is more expensive than in Honolulu or Hawai'i County, though land and construction costs are not dramatically different, suggesting regulatory limits on housing are more costly in Maui and Kaua'i Counties.

We find that land costs are relatively unimportant, representing 2.0% of the price of a new condo in Honolulu County, and less on Neighbor Islands. Construction costs are highest in Honolulu but are similar across the state. Condo prices vary widely, with new condos priced higher in Maui and Kaua'i. Therefore, high prices in Maui and Kaua'i are evidence that regulatory costs stifle condominium production more-so than in Honolulu or Hawai'i County. The cost of regulatory

⁶ We use 2023 condominium transaction data from Black Knight, a real estate data provider. According to current market conditions, we would expect condominiums in Hawai'i County, Honolulu County, Kaua'i County, and Maui County to cost, respectively, 92%, 95%, 126%, and 125% of the state level.

hurdles in Hawai'i County are the lowest, but this is not because regulations are more liberal, rather there is less demand for new condominiums, so the regulations are less costly. We estimate a per unit regulatory cost of \$561,000 in Maui, \$567,000 in Kaua'i, \$347,000 in Honolulu, and \$343,000 in Hawai'i County.

5. CONCLUSION

Hawai'i imposes significant regulations on the development of new housing. Focusing on the condominium market, we find that over half the price of a new condominium is attributable to regulatory costs. Regulatory costs add \$387,000 per unit. While Hawai'i has the highest land and construction costs in the nation, we find that these only explain a small portion of the price premium for new multifamily housing.

The huge gap between market prices and the marginal cost of production raises the question of where that money goes. In other words, what are the regulatory costs? Some of these costs are direct monetary payments by developers. In essentially all new developments, developers are required to contribute to the upgrading of local infrastructure through infrastructure improvement fees. For example, the developer may be asked to fund upgrades to local roads, sewers, or electrical infrastructure in exchange for permit approval. A recently approved [project on Ward Avenue](#) included a \$7.3 million (\$13,400 per unit) transfer to the government for water and sewer fees. This portion of regulatory costs is not entirely wasteful, because it generates needed infrastructure. However, putting the cost burden of infrastructure on developers, rather than funding infrastructure through general property taxes, significantly inflates the cost of housing production and effectively asks new homebuyers to bear the full costs of new infrastructure. There is also a coordination challenge, where developers must engage in costly negotiations with the county in order to secure the needed infrastructure agreements.



Caption: The market price of residential land plus condominium construction costs account for less than half of the market price of a new condominium.

In addition to direct fees paid by the developers, regulatory costs can arise due to the extremely slow and complex procedures involved in getting housing permitted. Condominium construction in Hawai'i is intensely regulated [compared to other states](#), requiring more layers of approval and risks of legal and political obstacles. For multifamily projects approved in the state over the past five years, the median wait time for a permit was [over 400 days](#). Many projects wait far longer and some are never approved at all. These delays require the developer to incur costs as they sit on undeveloped land and unused materials. Complex rules also incentivize the hiring of expensive lawyers and lobbyists to help navigate the complex bureaucracy.

Developers incur upfront costs when designing a new proposal. Navigating the strict regulatory climate requires sophisticated planning. Reducing regulations and fostering a more competitive property market could help drive these costs down. Some level of overhead design and planning costs are needed for a successful project, but these are a small share of the costs we attribute to regulation.

Hawai'i has strict zoning and building codes compared to other states. Complying with strict requirements for elements such as design, parking, and affordable housing inclusion can be costly. For example, a [report from Ulu pono](#) estimated the cost of fulfilling mandatory parking requirements can reach \$84,000 per unit.

An additional share of regulatory costs can show up in the profit margins developers earn on completed projects. The complexity of regulation means that few firms are large enough and have the needed influence to successfully complete large multifamily projects. This may lead to an uncompetitive market, where developer profits on successfully completed projects are larger than they would be in a more open and competitive market. Because there is a significant risk of a project being derailed by political or legal challenges in Hawai'i, developers will require larger profit margins on their successful projects to subsidize losses on projects that do not make it through the process.

Hawai'i has the highest housing costs in the nation. Housing costs place an enormous burden on local households, reduce the state's ability to retain a workforce, and force a significant share of the population to leave the state in search of better affordability. In 2022, Hawai'i experienced a net outflow of 11,000 residents to other states. Regulations can create important community benefits such as environmental preservation and affordable housing units. However, it is worth weighing these benefits against the huge burden of high housing costs.

In a market with lower regulatory costs, developers would have strong financial incentives to provide much more multifamily housing than they currently do. More housing production would lower housing costs, which could have significant benefits for overall housing affordability in the state.

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