



## CROWE Graduate Scholar Series #3

# Zoning Regulations, Housing Affordability, and Life-cycle Inequality\*

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## Executive Summary

- Land-use and building regulation has made housing scarce and expensive precisely where economic opportunity is greatest, and its costs fall hardest on the young.
- In the most regulated third of large U.S. metros, the median home now costs 5.2 years of median local income, versus 3.2 in the least regulated, and young households are roughly sixteen percentage points less likely to own than in the least regulated third.
- Restrictive zoning operates as a regressive transfer across generations, inflating the housing wealth of older incumbent owners at the expense of the younger households who must buy from them.
- We discuss evidence from two natural experiments. Where geography makes building hard, higher prices flow into the wealth of older owners; and when demand booms, heavily regulated metros convert the boom into a wider young–old ownership gap while lightly regulated metros simply build.
- The remedy is not subsidies that push against a restricted supply and enrich incumbents, but freedom to build.

## Introduction

A young American household trying to buy its first home today faces a market its parents would not recognize. The median first-time homebuyer is now 40 years old, a record high, up from the late twenties in the early 1980s, and first-time buyers have fallen to 21 percent of purchases, the lowest share ever recorded (National Association of Realtors, 2025). Nationally, millennial homeownership at ages 25–34 ran roughly eight percentage points below that of baby boomers and Generation X at the same ages, a gap that persists even among the college-educated (Choi et al., 2018; Goodman and Mayer, 2018). As we show, the problem concentrates in the metros where local governments most tightly restrict what may be built.

Minimum lot sizes, single-family-only mandates, discretionary review, and lengthy permitting raise the cost of producing housing and cap the quantity produced. When demand grows against a regulated supply, prices rise above construction costs and stay there. The well-documented result is a large efficiency loss. Less appreciated is the distributional result: regulatory scarcity is a transfer as well as a loss. Every dollar of scarcity premium a young person pays to enter the market is a dollar of asset appreciation captured by an incumbent owner, who is on average older and wealthier. Restrictive regulation thus drives “lifecycle inequality”, a systematic divergence between households who bought cheaply under looser rules and the cohorts arriving behind them.

The sections that follow first synthesize the evidence that regulation is the binding constraint on housing supply, then document the affordability and ownership gaps between more- and less-regulated metros, then present two natural experiments that provide causal evidence, and finally turn to the economics and politics of the transfer and the path to reform.

## The Costs of Regulation

In a competitive market, the price of a home roughly equals the cost of producing one, structure plus land. Glaeser and Gyourko (2018) measure the gap between market prices and minimum profitable production cost and find that in highly regulated coastal metros prices exceed production costs by more than 50 percent; this “regulatory tax” is small or zero in lightly regulated markets and far exceeds any plausible externality zoning addresses. Glaeser, Gyourko and Saks (2006) show that until about 1970 American cities met demand with construction, and only the spread of restrictive regimes thereafter turned demand growth into much higher prices.

Micro-evidence ties prices to specific rules. Using a nationwide dataset of minimum lot sizes covering more than 16,000 jurisdictions, Song (2025) finds that doubling the minimum lot size raises house prices by roughly 14 percent and rents by 9 percent; Kulka,

Sood and Chiumenti (2022) reach the same conclusion by comparing homes on opposite sides of Greater Boston zoning boundaries. The Wharton index, built from surveys of thousands of local governments, summarizes how restrictive each place's rules are (Gyourko, Saiz and Summers, 2008; Gyourko, Hartley and Krimmel, 2021), and the most restrictive large metros (San Francisco, New York, Seattle, Boston) are largely the same in each wave. Regulation is not the only force driving housing costs. The 2000s boom-bust owed much to credit and beliefs (Mian and Sufi, 2009; Kaplan, Mitman and Violante, 2020), and geography constrains some markets (Saiz, 2010), but credit cycles are episodes, while the regulatory wedge is a four-decade trend that separates expensive metros from affordable ones today.

## The Generational Wedge Across Regulated Metros

We sort the roughly fifty largest metros into thirds by the Wharton index. Homeownership, home values, incomes, and rents come from Census and American Community Survey microdata for household heads, 2000–2024 (Appendix A). Restrictiveness is a persistent trait of places, so these comparisons are descriptive.

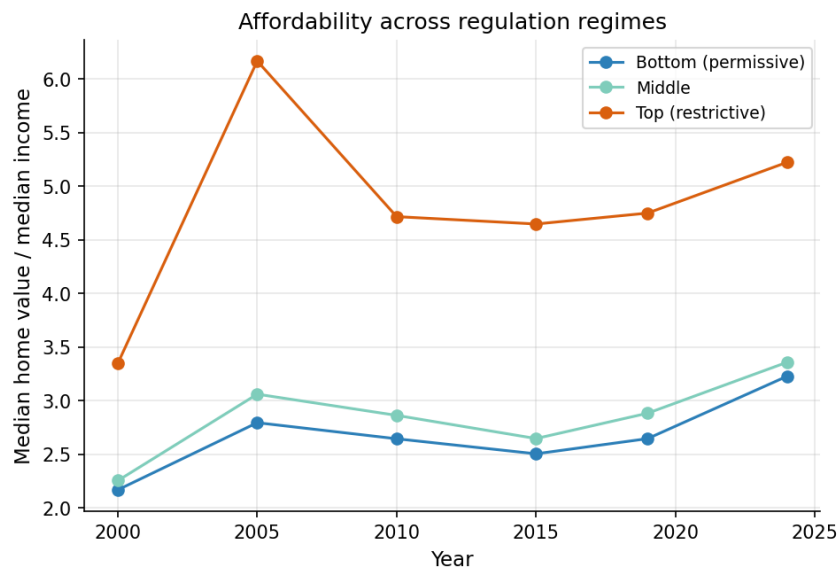


Figure 1: Median home value as a multiple of median household income, ~50 largest U.S. metros grouped into thirds by regulatory stringency, 2000–2024.

Figure 1 shows the affordability gradient. In 2024 the median home in the most regulated third cost 5.2 years of median income, against 3.4 in the middle and 3.2 in the least regulated. Because the measure divides by local income, this is not a rich-city artifact. Prices in regulated metros have outrun even their own high incomes. The 2005 spike is telling. At the peak of the housing bubble, the restrictive third shot up to 6.2 years of income while the less-regulated thirds barely moved. An overregulated market cannot expand quantity,

so when speculative demand surged, metros that could not build absorbed it in price.

The burden falls unevenly across the life cycle. In restrictive metros, 30 percent of young (25–34) household heads own their homes, versus 46 percent in permissive metros. Tracing ownership by age of household head in 2024, the gap peaks at seventeen points at ages 30–34 and stays above thirteen points into the early forties, precisely the ages at which today’s typical first-time buyer is trying to enter. It then fades with age: among heads aged 60–64, most of whom bought decades ago under looser rules, it narrows to nine points. The penalty appears in every survey wave since 2000 (Appendix D). On the asset side, among older homeowners the value-to-income ratio rose from 3.4 to 5.3 in restrictive metros between 2000 and 2024, versus 2.2 to 3.3 in permissive ones. The pattern is striking but correlational since restrictive metros also have strong labor markets, and a cross-sectional comparison cannot separate the two.

## Two Natural Experiments

The descriptive gap could reflect demand rather than regulation, as high-amenity metros both regulate more and attract more people. We therefore run two tests built on differences across metros that neither households nor city councils chose; Figure 2 previews the results, and Appendices B–D give the formal details.

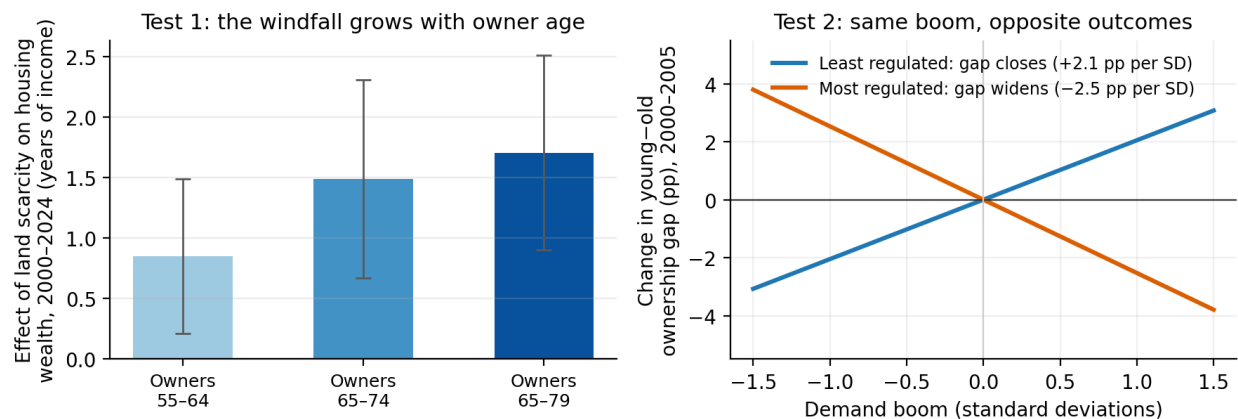


Figure 2: The two natural experiments. *Left*: effect of geographic land scarcity on owners’ home value-to-income, 2000–2024, by owner age; whiskers are 95% CIs (Appendix B). *Right*: fitted response of the young–old ownership gap to a one-SD demand boom, 2000–2005, by regulation regime (Appendix C).

**Test 1: where building is restricted, who gains?** Some metros cannot easily expand for reasons that have nothing to do with politics. Oceans, mountains, and wetlands leave little buildable land (Saiz, 2010). Comparing metros by buildable land isolates what scarce supply itself does and lets us follow the money. Prices grow faster where land is more scarce, and the growth flows into the housing wealth of older incumbent owners. A 10

percent rise in real house prices lifts the home value of owners aged 55–64 by about a quarter of a year’s income, and the windfall roughly doubles for owners aged 65–74. The left panel of Figure 2 shows this age gradient, which is exactly the signature of a transfer to those who bought earliest and cheapest.

The same scarcity does less to move the rate at which young households own in this test. This is likely because their penalty was largely locked in before 2000, so it sits in levels rather than recent changes. Indeed, in every survey year since 1990, young ownership runs about two percentage points lower per standard deviation of regulatory stringency (Appendix B). Scarcity stopped admitting new owners longer ago, but it has never stopped enriching incumbent ones.

**Test 2: what happens when demand booms?** If regulation is the binding constraint, the same wave of demand should play out differently where building is legal and where it is not. We measure demand waves using each metro’s inherited industry mix: a metro concentrated in industries that boomed nationally received a bigger local boom, for reasons unrelated to its own zoning (Saks, 2008; Goldsmith-Pinkham, Sorkin and Swift, 2020). Permissive metros absorbed these booms with construction, and young ownership held its ground. In restrictive metros the same boom widened the divide: a typical demand wave opens the young–old ownership gap by more than four percentage points relative to permissive metros (Figure 2, right panel). The effect is sharpest when measured over 2000–2005 before the foreclosure crisis muddled the comparison, and it appears as well at ages 35–44, where today’s first-time buyers typically enter (Appendix D). Demand booms build houses where building is permissive and generate exclusion where it is overregulated.

Together with the literature, the results complete a chain. Regulation raises prices and rents (Song, 2025; Kulka, Sood and Chiumenti, 2022; Greenaway-McGrevy and Phillips, 2023); prices driven by restricted supply flow into incumbent wealth (Test 1); and regulation converts demand growth into generational exclusion rather than construction (Test 2). The competing demand-side stories, riskier young-adult earnings (Paz-Pardo, 2024) and credit policies that let older owners borrow rather than sell (Zhang, 2025), are national in scope and cannot explain why the problem concentrates in regulated metros. However, this does not deliver the full counterfactual experiment of what American housing would look like had regulation been frozen at its 1980 level. Future research will address that question with a formal model.

## **A Regressive Transfer, Its Politics, and the Remedy**

A house-price increase driven by artificial scarcity does not create wealth, it revalues an existing asset, benefiting whoever holds it at the expense of whoever wants to buy it.

Glover et al. (2020) provide the welfare logic for the Great Recession, when collapsing prices transferred resources toward young buyers. Regulation-driven appreciation is the inverse; a persistent, policy-generated gain to incumbents and a rising lifetime cost to each new cohort. There is nothing wrong with homeowners prospering, but the problem is that here the incumbent's windfall is the entrant's penalty.

Why is it economically costly that the same dollars sit in older rather than younger hands? First, timing: a dollar extracted from a credit-constrained thirty-year-old saving for a down payment cuts spending and investment far more than a dollar of paper appreciation raises them for a seventy-year-old who will likely never sell. Second, compounding: a first home is the standard vehicle for middle-class saving and the collateral behind much small-business borrowing, so buying at 40 rather than 29 forfeits a decade of equity at the ages when it matters most. Third, heredity: when entry requires wealth rather than income, parental help decides who owns, and the scarcity windfall passes down inside already-propriety families, so lifecycle inequality hardens into inherited inequality (Daruich, 2026). The toll reaches the labor market too, as housing costs swallowed big-city wage gains, the century-old engine of regional income convergence stalled (Ganong and Shoag, 2017).

Popular remedies subsidize demand, such as down-payment assistance, first-time-buyer credits, easier mortgage terms. Against a supply that cannot expand, a dollar of buyer subsidy bids up prices and lands in the seller's pocket. Supply works in the opposite direction as each new unit starts a chain of moves that frees up a cheaper unit behind it, so even market-rate construction filters down to the older, cheaper stock. The mechanism is visible where building has been legalized at scale, for example Auckland's 2016 upzoning which set off a sustained construction boom in exactly the newly permitted housing types (Greenaway-McGrevy and Phillips, 2023), and Houston's smaller minimum lot sizes and relaxed zoning filled its urban core with modest townhouses on land once reserved for single-family homes (Hamilton and Furth, 2020).

If the costs are so large, why does regulation survive? Because its benefits are concentrated among those who vote in local land-use decisions. A homeowner's house is typically her largest asset, supply restrictions inflate its value, and zoning is decided by exactly these incumbent owners (Fischel, 2001); the losers, young households, renters, and future arrivals, are not there to participate. The policy persists because it delivers the incumbent wealth gains Test 1 measures. Because most of deregulation's gains accrue to future cohorts, most adults alive today oppose it (Daruich, 2026). Reform that asks councils of homevoters to volunteer away their scarcity rents will fail, so reform should also change who decides.

The agenda is clear. Legalize modest density by ending single-family-only mandates and cutting minimum lot sizes, the rules with the best-identified price effects (Song, 2025).

Legalize accessory dwelling units, which add supply on land owners already hold. Make permitting by-right and time-limited, replacing discretionary review with objective standards and shot clocks. Because local control is the mechanism of the lock-in, use state preemption, as California did for accessory units and Oregon for middle housing, to set floors no locality may undercut. Preemption here prevents the heavy hand of government by restoring owners' rights to build on their own land. None of this requires public spending; it asks government only to stop prohibiting voluntary exchange between a landowner who wants to build and a family that wants to buy.

## **Conclusion**

Restrictive land-use regulation has turned America's most productive places into wealth appreciation for those who arrived early and high walls for those who arrived late. A fifteen-point young-ownership penalty, and scarcity that capitalizes into the wealth of the oldest incumbents while demand growth becomes generational exclusion rather than housing. This is a government-made transfer from the young to the old and from renters to owners. The way to make housing affordable is the way America did it before 1970: let people build.

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## A Data

**Regulation.** Local regulatory stringency is the 2018 Wharton Residential Land Use Regulatory Index (WRLURI) (Gyourko, Hartley and Krimmel, 2021), which aggregates survey responses on approval processes, density restrictions, exactions, and political involvement, mapped from jurisdictions to the metro (CBSA) level. The descriptive terciles use the 52 large metros in the authors’ primary sample (17/17/18 per tercile); the causal designs use an unweighted all-jurisdiction aggregate, which expands the cross-section to roughly 200 metros at the cost of the authors’ sampling weights.

**Households.** Household statistics come from Census 2000 and American Community Survey (2005, 2010, 2015, 2019, 2024) microdata via IPUMS-USA (Ruggles et al., 2025), restricted to household heads aged 25–64 in identifiable metros. The baseline “young” band is 25–34 and the baseline “incumbent” band is 55–64. Ownership is the share of heads in the age band who own; value-to-income (VTI) is median owner-reported home value divided by median household income within each metro–age–year cell (gross housing wealth, the appropriate object since the transfer operates through asset appreciation).

**Prices, geography, and demand.** Real house-price growth is the FHFA all-transactions MSA index deflated by CPI-U. Land unavailability and supply elasticity are from Saiz (2010). The demand shock is a shift-share (Bartik) measure: national industry employment growth over 2000–2010 weighted by each metro’s lagged industry employment shares, so a metro’s shock reflects its inherited industry mix rather than any local policy or outcome (Saks, 2008; Goldsmith-Pinkham, Sorkin and Swift, 2020).

## B Test 1: Land Scarcity as an Instrument for Prices

For a window  $[t_0, t_1]$  we estimate the long difference

$$\Delta y_m = \beta \Delta \ln P_m + X'_m \lambda + \varepsilon_m,$$

where  $\Delta \ln P_m$  is real house-price growth instrumented by Saiz land unavailability and  $X_m$  contains a constant, a coastal indicator, and log population; standard errors are HC1-robust. The first stage is strong: unavailability predicts 2000–2024 price growth with  $F = 32$  ( $N = 198$ ).

For incumbent (55–64) value-to-income, the reduced-form slope is +0.85 ( $t = 2.6$ ) and the 2SLS price effect  $\beta = +2.30$  ( $t = 3.1$ ): a 10 percent exogenous price rise raises incumbent VTI by roughly 0.23 years of income. The effect is larger in earlier windows (1990–2005:  $\beta = +5.2$ ,  $t = 5.0$ ) and survives dropping coastal metros. Young (25–34) ownership shows no detectable response over any post-2000 window ( $\beta = +0.06$ ,  $t = 0.9$ ), consistent with

the level-versus-flow reading in the text: the young-ownership penalty was already fully formed by 2000, so designs identified from post-2000 *changes* have little entry variation left to explain. Regressing young-ownership *levels* on the same standardized instruments year by year yields a penalty of roughly two percentage points per standard deviation of regulatory stringency that is significant and stable in every year back to 1990 (Table A1).

Table A1: Young (25–34) ownership *levels* regressed on the standardized instruments, year by year (controls: coastal indicator, log population; HC1 robust  $t$ ;  $N = 172$ –192 metros).

| Year | WRLURI (per SD) | robust $t$ | Unavailability (per SD) | robust $t$ |
|------|-----------------|------------|-------------------------|------------|
| 1990 | −0.014          | −2.2       | −0.013                  | −2.3       |
| 2000 | −0.020          | −3.1       | −0.015                  | −2.5       |
| 2005 | −0.021          | −3.1       | −0.012                  | −1.9       |
| 2010 | −0.029          | −3.6       | −0.024                  | −3.7       |
| 2015 | −0.019          | −3.1       | −0.018                  | −3.0       |
| 2019 | −0.019          | −2.6       | −0.006                  | −0.9       |
| 2024 | −0.019          | −2.7       | −0.010                  | −1.4       |

## C Test 2: Demand Shocks Interacted with Regulation

With a single 2000–2010 shift-share shock the panel collapses to a long difference,

$$\Delta y_m = b_0 + b_1 \text{Bartik}_m + b_2 (\text{Bartik}_m \times \text{WRLURI}_m) + b_3 (\text{Bartik}_m \times \text{Unavail}_m) + X'_m \lambda + \varepsilon_m,$$

where all moderators are standardized,  $b_2$  is the estimand—how regulation changes a metro’s conversion of a demand shock into each outcome—and  $b_3$  is a horse race separating policy from terrain ( $N = 171$ ).

Estimates over the full 2000–2010 window are attenuated because the outcome is measured at the 2010 foreclosure trough, which fell hardest on elastic, permissive Sunbelt metros. Ending the outcome window in 2005 removes this contamination. The aligned estimates are sharp: on the young–old ownership gap,  $b_2 = -0.020$  ( $t = 3.2$ ); on young (25–34) ownership,  $b_2 = -0.014$  ( $t = 3.5$ ). In the binary regime split (top versus bottom WRLURI tercile), the demand-shock slope on the gap is  $+0.021$  per standard-deviation shock in permissive metros and  $-0.025$  in restrictive ones, a difference of  $-0.046$  ( $t = 2.8$ ); these regime-split slopes are the ones plotted in Figure 2. The interaction is negative in every unweighted specification and window we have run. The young-ownership interaction fades under precision weighting while the gap interaction survives it ( $-0.012$ ,  $t = 2.3$ ), so we treat the gap as the primary estimand.

## D Robustness to Age-Band Definitions

The baseline bands (young 25–34, incumbent 55–64) were fixed before the causal analysis. Two facts about 2024 motivate stress-testing them: the median first-time buyer is now 40, above the young band, and incumbents aged 65+ have held their homes longest. Three results follow (Table A2). First, the descriptive penalty is not band-dependent: the permissive–restrictive ownership gap peaks at ages 30–34 (17.1 points) and exceeds 13 points through ages 40–44, so the baseline band if anything sits *below* the modern entry margin. Second, the Test 1 incumbent-wealth effect strengthens monotonically with the age of the incumbent band, from +0.85 ( $t = 2.6$ ) for 55–64 to +1.49 ( $t = 3.6$ ) for 65–74 and +1.71 ( $t = 4.2$ ) for 65–79—older owners bought earlier and cheaper and capture more of the scarcity windfall. Third, the Test 2 exclusion result strengthens when “young” is defined at today’s actual entry ages: for the 35–44 band the interaction on ownership is  $-0.008$  ( $t = 2.07$ ) over the *full* 2000–2010 window, whereas the baseline 25–34 band requires the clean 2000–2005 window to reach significance.

Table A2: Headline causal estimates. Panel A: land-scarcity instrument (Test 1), 2000–2024 changes, HC1 robust. Panel B: demand-shock  $\times$  regulation interaction (Test 2), per standard-deviation shock.

| <i>Panel A. Land scarcity <math>\rightarrow</math> prices <math>\rightarrow</math> outcome</i> |                     |                      |               |
|------------------------------------------------------------------------------------------------|---------------------|----------------------|---------------|
| Outcome                                                                                        | RF slope (unavail.) | 2SLS $\beta$ (price) | 1st-stage $F$ |
| Incumbent VTI, 55–64                                                                           | +0.85***            | +2.30***             | 32            |
| Incumbent VTI, 65–74                                                                           | +1.49***            | +4.02***             | 32            |
| Young (25–34) ownership rate                                                                   | +0.02               | +0.06                | 32            |
| <i>Panel B. Bartik <math>\times</math> WRLURI interaction (<math>b_2</math>)</i>               |                     |                      |               |
| Outcome, window                                                                                | $b_2$               |                      | robust $t$    |
| Young–old gap, 2000–2005                                                                       | $-0.020^{***}$      |                      | 3.2           |
| Young–old gap, regime split (top–bottom), 2000–2005                                            | $-0.046^{***}$      |                      | 2.8           |
| Young (25–34) ownership, 2000–2005                                                             | $-0.014^{***}$      |                      | 3.5           |
| Young (25–34) ownership, 2000–2010                                                             | $-0.006$            |                      | 1.3           |
| Young (35–44) ownership, 2000–2010                                                             | $-0.008^{**}$       |                      | 2.1           |

\* 10%, \*\* 5%, \*\*\* 1% (robust  $t$ ). VTI = median home value over median income. Panel B moderators standardized; regime split compares top and bottom WRLURI terciles. The 2000–2005 rows use a shock aligned to that window. Young-ownership interactions are identified mainly outside the largest metros and fade under precision weighting; the gap interaction survives it ( $-0.012$ ,  $t = 2.3$ ).