

Folk Economics and the Persistence of Political Opposition to New Housing*

Clayton Nall[†], Chris Elmendorf[‡], Stan Oklobdzija[§]

February 10, 2024

Contents

1	Introduction	5
2	Challenges for a Pro-Supply Housing Politics: Collective Action and Folk Economics	8
3	Empirical Strategy	11
4	Results	17
4.1	People Say They Want Lower Housing Prices	17
4.2	Majorities Incorrectly Predict the Directional Effect of Regional Housing-Supply Shocks on Prices	19

*This research was generously supported by the UCSB Pahl Initiative on Critical Social Issues and the Manhattan Institute. For comments, we thank David Broockman, Charlotte Cavaille, Katie Einstein, Bob Ellickson, Michael Hankinson, Dan Hopkins, Michael Manville, Eric McGhee, Julia Payson, Shane Phillips, David Schleicher, Dominik Stecula, Chris Tausanovitch, Jessica Trounstine, and attendees at the SoCal Political Economy Workshop, the American Political Science Association Annual Meeting (2022), and the Consortium on the American Political Economy. We also thank Alfred Twu, who drew the illustrations used in one of our surveys. Thanks to the numerous undergraduate research assistants who helped test and discuss survey instruments.

[†]Corresponding Author. Associate Professor, Department of Political Science and Affiliate, Department of Geography, University of California, Santa Barbara.

[‡]Martin Luther King Jr. Professor of Law, UC Davis.

[§]Assistant Professor, Department of Political Science and Director of The Center for Public Policy Research, The Murphy Institute, Tulane University.

4.3	People Get “Supply and Demand” Right For Most Goods and Services, But Not Housing	21
4.4	The Puzzlingly Weak Relationship Between Housing Supply Skepticism and Its Expected Correlates	21
4.5	The Puzzle Explained: Evidence of Low Test-Retest Consistency	25
4.6	Policy-Preference Formation in the Cognitive Supply-Side Void	28
5	Discussion and Conclusion	33
	Appendices	1
	Appendix A Details of Survey Structure and Question Wording	1
A.1	Structure of Survey 1	1
A.2	Structure of Survey 2	2
A.3	Structure of Survey 3	4
A.4	Wording of Focal Survey Questions	6
	Appendix B Additional Results on Test-Retest Consistency (Survey 3)	17
	Appendix C Design-Based Robustness Check on Housing Supply Skepticism (Surveys 2 & 3)	19
	Appendix D Self-Reported Uncertainty About Price and Rent Predictions (Surveys 2 & 3)	22
D.1	Self-Reported Confidence	22
D.2	Adding a “Don’t Know” Response Options	22
	Appendix E Causal Mental Models of Housing Markets (Survey 2)	26
E.1	Design	26
E.2	Findings	28

Appendix F Other Housing-Market Beliefs (Surveys 2 and 3)	43
Appendix G Additional Evidence on Policy Preferences and the Motivated-Reasoning Conjecture (Survey 2)	44
Appendix H Elicited Quantity and Price Effects of Upzoning (Survey 1)	48
Appendix I Additional Results on Housing Politics (Surveys 1, 2, & 3)	50
I.1 Support for Upzoning and Land-Banking, by Subjective Interest and Price Predictions)	51
I.2 Support for Upzoning, by Anxiety About Impacts on Value of One’s Home or Rent for One’s Apartment	53
I.3 Correlations Among Housing Policy Preferences and Price Predictions)	56
I.4 Regression Models	56
I.5 Attributions of Blame for Housing Costs	61
I.6 Natural Language Analysis	62
Appendix J Respondent Demographics (Surveys 1, 2, & 3)	65
Appendix K Descriptive Stats for Constructed Indices	67
K.1 Economic Knowledge	67
K.2 Zero-Sum Thinking	69
K.3 Subjective Numeracy Scales	69

Abstract

Why is housing development so severely restricted in U.S. cities and suburbs? Political economy scholars often point to local politics, where homeowners can exploit discretionary planning processes to oppose new developments while renters remain indifferent due to the diffuse benefits of increased supply. One proposed solution has been to elevate land-use authority to the state or regional level, thereby circumventing NIMBYism and leveraging voters' stated preferences for lower prices by increasing housing supply. However, in three surveys of urban and suburban voters we find a significant barrier: although many desire lower prices, only 30-40% believe that a higher supply would lead to this outcome. This skepticism towards the "supply and demand" principle in housing starkly contrasts with respondents' otherwise accurate understanding of other markets. Instead, for housing there is a strong, stable "folk economic" belief blaming high prices on landlords and developers. We discuss the implications of these findings for state-level housing-supply expansion plans.

1 Introduction

For two decades, the urban and regional economics literature has documented the increasing severity and social costs of housing-supply restrictions in high-demand urban areas (Glaeser, Gyourko and Saks, 2005; Glaeser and Gyourko, 2018; Albouy and Ehrlich, 2018; Jackson, 2016). Glaeser and Gyourko (2018) estimate that in the most heavily regulated, supply-constrained metropolitan markets, regulatory constraints have tripled home prices. Recent papers conclude that local restrictions on new housing lowered U.S. economic growth (Hsieh and Moretti, 2019) and that high-cost markets have left even college-educated workers no better off once their housing expenses are accounted for (Card, Rothstein and Yi, 2023). Socioeconomic mobility also suffers as lower-income families are priced out of high-opportunity communities (Chetty, Hendren and Katz, 2016; Acolin and Wachter, 2017).

The prevalence of housing-supply constraints is often explained in terms of informed, rational actors confronting a collective action problem. Local governments exercise control over land use and their discretionary power in project approval (Selmi, 2010; O’Neill et al., 2022). The dispersed regulatory power across small jurisdictions creates a collective action dilemma, benefiting those who limit housing within their area while exploiting regional benefits (Fischel, 2001; Babcock, 1966; Ellickson, 1977; Hills and Schleicher, 2011; Hankinson, 2018; Einstein, Glick and Palmer, 2019; Marantz and Lewis, 2022). Local residents, especially in small cities, can restrict housing supply yet gain from regional agglomeration economies (Fischel, 2001; Marantz and Lewis, 2022; Favilukis and Song, 2023). Homeowners, sensitive to local externalities like noise and congestion, lobby city councils against new projects (Trounstine, 2021; Einstein, Glick and Palmer, 2019; Yoder, 2020; Sahn, 2022), while potential beneficiaries, such as renters and businesses favoring lower housing costs, seldom rally in support due to the minimal impact of individual projects on overall rents (Danielson, 1976; Hills and Schleicher, 2011; Einstein, Ornstein and Palmer, 2019). Consequently, NIMBY homeowners tend to dominate local planning decisions.¹ Even apparent deviations from this

¹The YIMBY movement, by contrast, mirrors many middle-class and professional-managerial-class reform movements, driven less by economic incentives and more by post-materialist values (Wilson, 1962; Inglehart, 1981).

behavioral model are explained in terms of residents acting in response to their perceived interests. For example, [Hankinson \(2018\)](#) finds that renters are averse to construction of nearby market-rate housing out of concern that it will cause local rents to increase.

The shortcoming of models of housing politics focused on the collective action problem is that we do not know what housing policies people would accept if housing policy were not dominated by localistic concerns. The sanguine conclusion of housing reformers—particularly of the “Yes in My Backyard” (YIMBY) variety ([Dougherty, 2021](#))—has been that state or regional preemption of local housing development policy would change the politics of housing by abjuring any reason for voters to develop localistic “NIMBY” preferences. Voters would then be free to act politically on their generalized preference for lower housing prices. And, it is hoped, the removal of decisionmaking from the local level will naturally lead them to support pro-supply housing policies at the state level. This hope is based on two assumptions: 1) that a majority of voters favor lower prices on average and 2) that additional housing supply would reduce prices. It is held that voters have latent pro-housing preferences that are currently being overridden by the placement of housing policy decisions in local government.

Our paper calls into question the existence of such a latent pro-housing constituency, showing that people favor lower housing prices but demonstrate little understanding of how housing markets work. We find instead that majorities believe that additional housing supply would *increase* prices or have no effect. In three preregistered online surveys of U.S. urban and suburban voters, we explore preferences for future housing prices and beliefs about the impact of increased housing supply.² Surprisingly, while most renters, and even many homeowners in our sample prefer lower prices, approximately 30-40% believe that a surge in their region’s housing supply would *increase* prices, and another 30% think it would have no effect. While the public often reasons about economics incorrectly ([Caplan, 2001](#); [Stantcheva, 2020](#)), our findings contrast with respondents’ relatively more accurate economic reasoning in other markets for products such as grain, labor, and cars, revealing

²We report all preregistration protocols in the Supplemental Information.

a unique skepticism towards supply-and-demand logic in housing.

Our study explores various explanations for public skepticism towards the impact of housing supply on prices, finding most of them insufficient. While [Been, Ellen and O'Regan \(2019\)](#) describe an ideology of housing-supply skepticism in urban politics that is led by political and academic critics of market-rate housing, our research indicates that the public's doubt does not form a similarly coherent ideological position. We assess correlations between beliefs about housing supply's price effects and various factors, such as zero-sum thinking, who is blamed for high prices, land-use policy preferences, and perceptions of new development's local effects. Our findings reveal that skepticism about housing supply's impact on prices is inconsistent, even within individual respondents, who often give wildly different answers about housing markets both between and within surveys. These results suggest that "supply skepticism" is more a "non-attitude" ([Campbell et al., 1960](#)) than an ideology.

What appears to fill the gap is a persistent, and much more stable distrust of specific actors blamed for high housing prices: a "folk economics" rooted in personal intuition takes the place of deliberate economic reasoning ([Rubin, 2003](#)). Disagreeing with the typical view of academic scholars of the supply shortage in economics and political science, majorities of the public believe that landlords and developers, not anti-development groups such as homeowners and environmentalists, are responsible for high housing prices. The prevalence of folk wisdom raises a critical question: Will transferring land-use policy control from local to state governments lead to supply-enhancing reforms? Or will it result in market interventions like price controls and investment restrictions, aiming to penalize those perceived as responsible for high prices, and potentially discouraging new housing development? We conclude by discussing implications for future housing policy.

2 Challenges for a Pro-Supply Housing Politics: Collective Action and Folk Economics

Recent political science research has focused on how local land-use control institutions interact with the collective action problem to hinder housing development ([Hills and Schleicher, 2011, 2020](#); [Hankinson, 2018](#); [Hankinson and Magazinnik, 2023](#); [Einstein, Glick and Palmer, 2019](#)). This body of work often views housing politics as driven by self-interest, influenced by owners' desire to protect home values ([Fischel, 2001](#)) or preserve neighborhood amenities ([Molotch, 1976](#); [Einstein, Glick and Palmer, 2019](#); [Trounstine, 2021](#)). These ideal-typical "homevoters" often oppose local housing development, particularly high-density projects, and they mobilize to protect their interests. Renters, by contrast, are seen as potential beneficiaries of housing development, and as untapped supporters of new housing, as surveys show that renters almost favor dense housing development more than homeowners do ([Hankinson, 2018](#); [Marble and Nall, 2021](#); [Trounstine, 2021](#)).³ However, renters rarely mobilize to support new housing development as much as owners organize to oppose it, since the benefits of any one project are diffuse; the collective action problem is a major obstacle to mobilizing a pro-housing constituency ([Olson, 1965](#); [Danielson, 1976](#)). For both groups, the persistence of local discretion over housing development decisions reinforces a set of incentives that undermines housing approvals: homeowners activate in response to perceived local externalities of nearby projects, while renters who might benefit from an overall pro-development policy have little reason to mobilize in favor of the same developments, any one of which minimally affects equilibrium prices ([Einstein, Glick and Palmer, 2019](#); [O'Neill et al., 2022](#)).

Political scientists have produced research supporting the idea that removing politics from local politics would circumvent the "spatial collective action problem" that disincentivizes mobilization of support for housing more generally ([Hankinson, 2018](#)). The primary institutional argument for state involvement has been that moving the issue to the state (or perhaps regional) level better aligns the

³One explanation for the unexpectedly large number of renters who oppose new housing is that they are afraid that new market-rate housing will cause prices to increase in their neighborhoods ([Hankinson, 2018](#)).

geographic scope of policy-making with development’s costs and benefits (Favilukis and Song, 2023) in a way that could foster more universalistic housing politics (Pierson, 1993). But an additional behavioral argument has also been made. Journalist Jerusalem Demsas argues that localizing the housing debate amplifies selfish concerns, overshadowing broader values like housing affordability and homelessness (Demsas, 2023). Centralizing housing policy could reduce the *public’s* focus on parochial issues, leading them to shift their concern to broader issues like homelessness and overall housing affordability (Demsas, 2023) and bringing to the fore their generalized values (Jackman, 1978) about housing. “By restricting the [housing] debate to the hyperlocal level,” writes Demsas, “we’ve blocked out our big-picture values” and “magnifie[d] our selfish concerns: How will this affect *my* parking availability? What will this do to *my* view.” Essentially, Demsas and others argue that much opposition to new housing is literal NIMBYism (Not in My Backyard), an adverse reaction to specific local projects rather than a more generalized anti-development preference (Pendall, 1999; Wicki and Kaufmann, 2022).

The assumption that shifting housing politics from local to state governments will increase public support for pro-supply policies presupposes two beliefs on the part of the public: that people prefer lower housing prices, and they understand that additional supply will lower prices. However, economic reasoning is challenging for many voters (Caplan, 2001), and understanding housing markets can be particularly difficult. Housing, as a durable stock good, changes slowly in regional markets, unlike rapidly fluctuating commodities like gasoline, milk, or eggs. For example, between 2008 and 2023, the total housing stock in the United States increased at an imperceptibly low annualized rate of 0.7 percent (Federal Reserve Bank of St. Louis, 2023a). In recent decades, Americans have observed consistent rises in national median home prices, except during significant recessions (Federal Reserve Bank of St. Louis, 2023b), fostering the perception that macroeconomic factors and financial markets, rather than supply-side elements like building productivity or land-use restrictions, dominate housing prices (Goolsbee and Syverson, 2023; Glaeser and Gyourko, 2018). Another consideration is that amidst seemingly ever-increasing prices, people observing new housing

developments in high-price areas might mistake correlation for causation due to an “availability heuristic” (Tversky and Kahneman, 1973). This confusion, combined with the complexity of housing policy mechanisms, may lead voters to incorrect conclusions about private housing provision and its impact on prices (Hobbs and Hopkins, 2021).⁴

Never having observed significant housing supply increases that they associate with decreasing or moderating prices, people might rely on folk economics—the “intuitive economics of untrained people”—to understand housing markets (Rubin, 2003). In folk economics, market interactions are personalized and moralized, and fairness is emphasized over efficiency (Rubin, 2003; Boyer and Petersen, 2018; Stantcheva, 2021). We suspect that this style of reasoning is especially likely to arise around the often personal transactions that arise between buyers and sellers in real-estate transactions. High housing prices are often attributed to profit-seekers and price-gouging rather than a shortage of homes (Bhattacharjee, Dana and Baron, 2017; Shiller, Boycko and Korobov, 1991; Caplan, 2002; Blendon et al., 1997; Mansfield, Mutz and Brackbill, 2019; Stantcheva, 2022).⁵ Moreover, organized opponents of new development frequently pitch their arguments in a folk-economic register, blaming investors and developers for driving up prices while lobbying for price controls and severe restrictions on private development (Been, Ellen and O’Regan, 2019).

Recent research indicates that folk-economic reasoning significantly shapes public opinion on housing policy. Müller and Gsottbauer (2021) report that around 70% of Germans support rent control, and that support is higher among those who perceive it as “fair.” Monkkonen and Manville (2019) find that emphasizing “developer profits” in a survey experiment lowers support for housing development by twenty percentage points, aligning with the idea that people judge economic situations based on actors’ motives rather than outcomes. Marble and Nall (2021) observe that liberal homeowners are less inclined to support local apartment development when it is only

⁴Similar obscurity can be observed in designs of other policies, like Medicare, where the public mostly interacts with private actors, obscuring the importance of government action and potentially concealing the program’s effectiveness (Morgan and Campbell, 2011).

⁵According to Boyer and Petersen (2018), this heuristic-driven thinking stems from evolutionary adaptations. It similarly hinders systems-level understanding and affects judgments about national economic issues (see also Sausgruber and Tyran, 2005, 2011; Dal Bó, Dal Bó and Eyster, 2018). The public often blames specific actors for economic issues instead of considering larger macroeconomic factors (Blendon et al., 1997; Caplan, 2002).

suggested that doing so would lower housing prices, but they respond more positively when reminded that the additional housing would benefit lower- and middle-income families. These findings suggest that housing policy attitudes are often influenced by a sense of fairness and antipathy towards profiteering, rather than voter engagement with policies’ that might lower equilibrium prices.

However, it is still the case that voters show that they can understand and apply the logic of supply and demand, albeit not so well where housing is concerned. While it often applies folk-economic heuristics, the public does understand some fundamental economic principles, such as the responsiveness of workers to financial incentives (Shiller, Boycko and Korobov, 1991; Stantcheva, 2021) and the concept of comparative advantage (Stantcheva, 2022). Understanding when and how people bring such reasoning to bear on housing is a question that we hope to answer. Across different parts of the study, we speculated that the impact of increased housing supply might be more prevalent among those inclined towards zero-sum thinking (Rózycka-Tran et al., 2019; Chinoy et al., 2023), or among those who struggle with counterfactual reasoning or report difficult dealing with numbers (Kahan et al., 2017). Our study test these hypotheses.

3 Empirical Strategy

Our study’s empirical approach aims to achieve two main goals. First, we want to determine if a significant portion of the public is “supply skeptical”—believes that a substantial increase in regional housing stock will *not* lower home prices and rents. Second, if this belief is prevalent, we aim to understand if it aligns coherently with other experiences or beliefs—that is, has ideological structure. We also aim to capture its political significance by ascertaining whether supply skepticism is correlated with preferences for housing development policies.⁶

To answer these questions, we conducted three preregistered online surveys through the Bovitz Forthright panel, targeting adult residents of U.S. urban and suburban zip codes.⁷ We directed the

⁶Unfortunately, our design does not induce changes in beliefs about housing supply’s effect on prices, so we can only provide suggestive evidence regarding how supply skepticism influences policy preferences or other political outcomes.

⁷The survey targeted zip codes with weighted population densities above 500 persons per square mile. Weighted

survey vendor to maintain equal proportions of homeowners and renters in the sample and balance demographics such as age, race, and gender, using the vendor’s nationally representative population quotas.

Each survey asked respondents whether they would prefer future home prices and rents in their city to be higher, lower, or the same, assuming no changes in the economy or quality of life. Responses provide an initial indication of potential majority support for supply-side housing policy—of course, presuming people believe that additional housing supply can reduce prices.

Each of our surveys also presents a scenario depicting a significant, exogenous increase in housing supply within the respondent’s metropolitan region, asking participants to forecast the impact on future home prices and rents in their town or city. Additionally, we inquire about perceptions of supply shocks and their effect on prices in other markets, including markets for automobiles, crops, and skilled trades labor. (We also ask about the effect of free trade agreements on consumer prices.) Surveys 1 and 2 also explore attitudes towards “upzoning,” or easing restrictions on housing development density and height.⁹ Table 1 summarizes key questions across all surveys, with detailed wording in Section A.4 of the Supplemental Information.

Each survey features unique elements to measure economic knowledge, supply skepticism, and related factors. For example, Survey 1 probes respondents’ responses to a study (Mast, 2021) showing the impact of new housing in affluent areas on availability in lower-income regions (a process known as a “chain of moves”). Survey 1 also asks for their predictions of both quantity and price effects in a hypothetical upzoning situation. Survey 2 delves into psychological and experiential factors that may explain supply skepticism. Survey 3 tests the consistency of beliefs about the price effects of supply shocks in housing as compared to other consumer markets.

Our research unfolded in stages, with each survey revealing key insights used to develop

densities were calculated taking the mean population density of block groups within each zip code, using the population of included block groups as the weighting variable.⁸ This method ensured inclusion of respondents from urbanized zip codes with significant unpopulated areas.

⁹A pilot battery of policy preference items in Survey 3, being exploratory and not part of our preanalysis plan, is not included in this paper or the Supplemental Information.

subsequent survey designs. In Survey 1, we observed significant supply skepticism but found little correlation between price/rent predictions and understanding of the Mast (2021) “chain of moves” effect. This discrepancy led us to question the source of the non-correlation: whether the wording of our questions influenced responses or if the complexity and placement of certain questions led to respondent inattention.

Survey 2 aimed to confirm the persistence of supply skepticism under different question formats and to explore its relationship with other belief systems or experiences. This survey introduced a conjoint-style design, which randomly assigned each respondent a slightly different housing supply shock scenario, varying factors such as the shock’s cause, the question format, and posited counterfactual future housing prices and rents. It tested respondents’ ability to reason counterfactually and asked for their confidence in their predictions. This approach sought to discern whether housing-supply skepticism is a stable belief or an artifact of question phrasing and cognitive burden. The goal of this conjoint exercise was to determine how different aspects of the supply shock scenario might have elicited different levels of supply skepticism.¹⁰ Survey 2 also asked respondents to report their confidence in their predictions.

Survey 2, in addition to reinforcing the results of Survey 1, introduced new questions to probe the roots and implications of supply skepticism. These included: (1) a set of questions to identify zero-sum thinking; (2) “mental model” questions about the tangible effects of new housing due to the hypothesized supply shock, followed by queries on how these effects influence prices in general; (3) a question on the location of new housing development relative to areas with rising prices and rents; (4) inquiries about who is most responsible for high housing and rental prices; and (5) a question

¹⁰Among the randomized traits were the *cause* of the shock (technological change, or one of several forms of state preemption of local land-use restrictions); the *elicitation format* of the survey question. One elicitation format, which we label “complex,” mirrored the housing-supply-shock questions on Survey 1 and called on the respondent to engage in expressly counterfactual reasoning. This format posits a hypothetical home or apartment that would be worth (or rent for) \$X in five years in the absence of the shock, and then asks whether the same property in the same condition would be worth more or less than \$X in five years if the shock were to occur. Another format, which we call “potential outcomes,” separately elicited predictions of future home prices and rents under the status quo and under the supply-shock scenario. A third, which we call “simple,” did not discuss explicit counterfactual prices and is meant to lower the cognitive burden on respondents. The conjoint design is discussed in greater detail in the Supplemental Information.

on whether cities should ban new market-rate housing in areas designated for future affordable housing (also known as “land-banking”—a key policy plank often endorsed by supply-skeptical policy advocates) (Been, Ellen and O’Regan, 2019).

Survey 2’s findings confirmed that public skepticism about the impact of a positive regional supply shock on lowering home prices and rents remains consistent across various scenarios and methods of querying about price predictions (SI Section C). However, we observed only a weak relationship between price/rent forecasts and their anticipated correlates. Interestingly, respondents confident in their price or rent predictions exhibited similar levels of skepticism as those less confident, although overall self-reported confidence was low (SI Section D). This raised the possibility that supply skepticism might be less of a stable belief and more of a non-attitude (Campbell et al., 1960), reflecting confusion and guesswork rather than a coherent ideology.

Fortuitously, we were able to do additional testing around this tentative discovery using an “accidental panel” across the three survey samples provided by our survey vendor. About a third of the respondents from Survey 1 also participated in Survey 2, allowing an unplanned (and unregistered) analysis of test-retest consistency on the regional supply-shock questions and other repeated queries. We noted especially low retest consistency on the housing supply-shock question compared to other economic topics. This inconsistency could be attributed to variations in the cause of the supply shock and the question format presented in Survey 2, as these were randomly generated.

The findings from the accidental panel in Surveys 1 and 2 influenced the structure of Survey 3. First, we introduced a “super-simple” version of the regional shock question to closely align with the format used for non-housing supply shock items. This was to address the potential artifact arising from the complexity of housing-shock questions in the earlier surveys.¹¹ Second, we added questions about the impact of new “luxury” housing on existing housing prices in affordable areas,

¹¹In Survey 3, respondents were randomly assigned either the “simple” format from Survey 2 or the new “super-simple” format.

and whether housing development leads to nearby price increases or vice versa.¹² Third, we included a retest question towards the end of Survey 3, randomly selecting respondents for retesting on their price prediction accuracy.¹³ A formal hypothesis test was preregistered, anticipating lower test-retest reliability for housing-related questions compared to other supply shock questions. Finally, to explore the notion that widespread supply skepticism could stem from innumeracy, we included items from a validated numeracy scale based on self-reported comfort with numbers and arithmetic reasoning (Fagerlin et al., 2007).

Table 1: Main Components of the Surveys.

Component	Survey 1	Survey 2	Survey 3
Regional Housing Supply Shock (used to elicit price predictions)	10% increase in regional stock over 5 years caused by cities removing development restrictions	10% increase in regional stock over 5 years, randomizing (a) cause of shock (tech change, or state preemption of local restrictions on greenfield development, transit-oriented development, or densification of single-family home neighborhoods), (b) the format of the prediction-elicitation question (complex, simple, or potential-outcomes), and (c) counterfactual future prices in the absence of the shock	10% increase in regional stock over 5 years, randomizing (a) cause of shock (tech change or state preemption) and (b) elicitation format (simple or super-simple)
Non-Housing Supply Shocks (economic knowledge questions)	- Free trade agreement - Auto supply-chain problem	- Free trade agreement - Auto supply-chain problem - Better fertilizer - Training for would-be plumbers	- Free trade agreement - Auto supply-chain problem - Better fertilizer - Training for would-be plumbers

Continued on next page

¹²This addresses the elite supply skeptic argument that new market-rate housing in poorer areas drives gentrification, thus causing, rather than resulting from, higher prices (Been, Ellen and O'Regan, 2019).

¹³To minimize survey fatigue and disguise our intent, we made minor wording changes in the retest question, such as switching the profession from plumbers to electricians in the labor supply question.

Table 1: Main Components of the Surveys.

Component	Survey 1	Survey 2	Survey 3
Housing Policy and Politics	- Support for “gentle density” in single-family zones (geographic scale randomized)	- Agreement with statements about state preemption, including making local governments allow more suburban homes near cities, more apartment buildings near transit, or more 2-4 unit buildings in single-family neighborhoods - Blame for high housing prices & rents - Support “land banking” (ban market-rate development on sites that could be developed for affordable housing) - Support for transit-oriented development - Support for sprawl development	- Blame for high housing prices & rents ¹⁴ - Support for transit-oriented development - Support for sprawl development
Potential Explanations	- Predict findings of Mast’s (2021) chain-of-moves study	- Self-reported confidence in price/rent predictions - Zero-sum thinking battery - Observation of development in places where housing prices are going up - “Mental models” (beliefs about material effects of posited shock, and general consequences of such effects for prices)	- Self-reported confidence in price/rent predictions - Subjective numeracy battery - Belief about local price effects of new “luxury” housing in relatively affordable areas - Development: cause or consequence? (Do developers choose to build where prices are high, or does development cause prices to go up?)
Test-Retest Questions	N/A	N/A	- 10% regional housing supply shock - Local price effects of new luxury housing in affordable neighborhoods - Free trade shock - Auto supply chain shock - Agricultural productivity shock - Labor market shock

Notes. For diagrams of the surveys’ structure and exact question wording for the main items, see SI Appendix A.

¹⁴Survey 3 also included a pilot battery of other housing politics-and-policy questions. However, we did not address this battery in the preanalysis plan and, accordingly, we do not report results.

4 Results

4.1 People Say They Want Lower Housing Prices

To begin, we address the first of our major conditions that would result in a majority coalition for housing development: does the public in fact favor lower housing prices. We find that the public does, in fact, support lower housing prices. In all three surveys, we posed the question, “Think about possible futures for {your city}. Would you prefer home prices and rents to be higher, lower, or the same as today? Assume that the economy and quality of life would stay the same in other respects. Only home prices and rents would change.” The responses to this item are presented in [Figure 4.1](#).

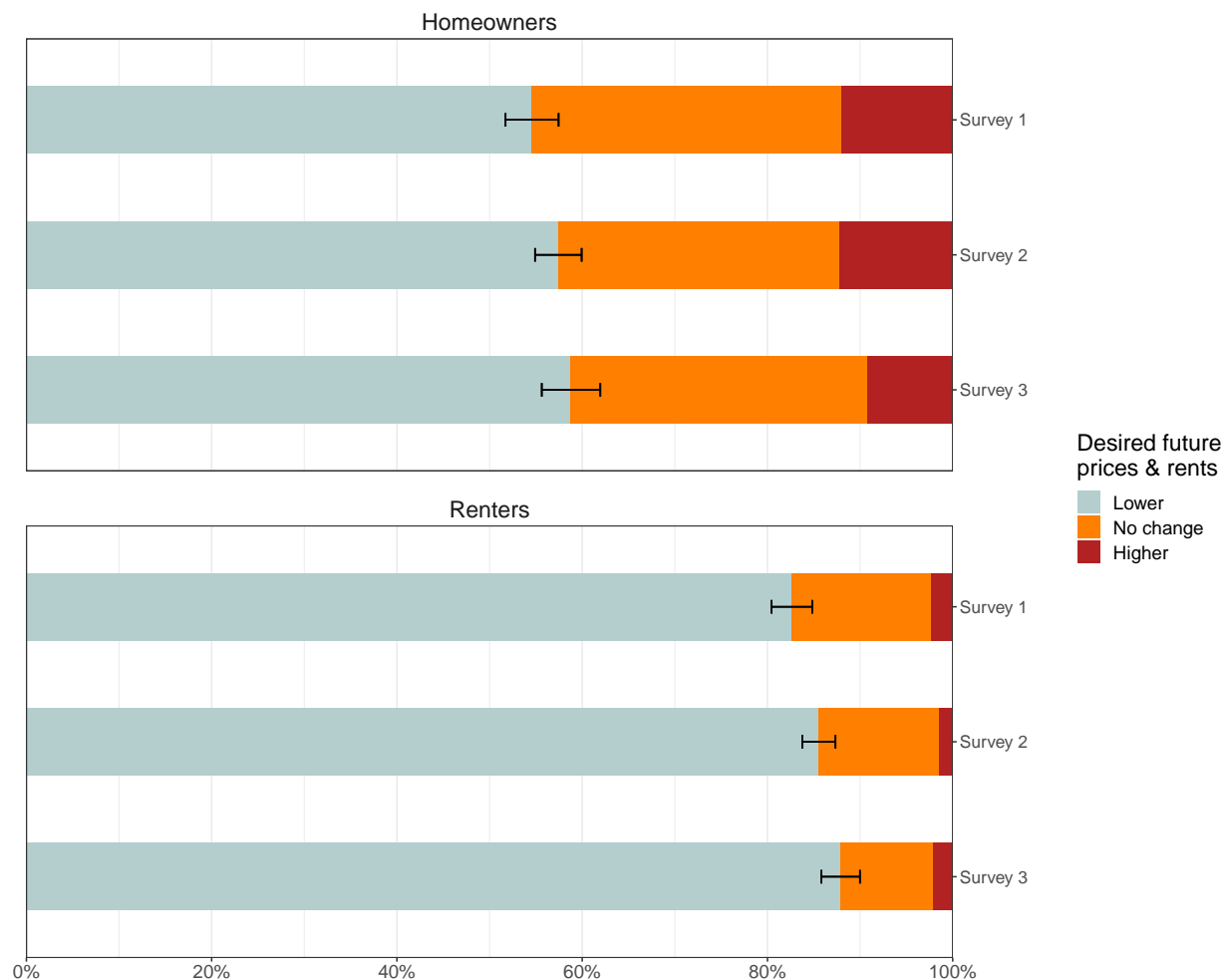


Figure 4.1: Desire for future home prices and rents in respondent’s city. On all three surveys, majorities of owners as well as renters said they would prefer future home prices and rents in their city to be lower than prices and rents today, assuming no change in the economy or quality of life.

We find broad-based, majority support for lower housing prices. Unsurprisingly, about 85% of renters say they would like rent prices to decline, and almost no renters say they would like prices to increase. More interesting, roughly 55-60% of homeowners also support lower prices and only about 12% say they would like prices to go higher. This result seems to be in considerable tension with the “homevoter hypothesis,” which holds that homeowners’ thinking about land-use policy is driven by a single-minded desire to maintain or increase property values (Fischel, 2001). However, homeowners’ apparent support for lower prices might be biased in several ways. One

possible explanation is social desirability bias: homeowners may not wish to appear greedy. They could have conflicting desires regarding future housing prices and rents, such as preferring lower rents but higher home prices, a nuance not captured by our price-preference question. They might also harbor the sentiment of wanting “lower prices for thee, but not for me,” which could lead them to resist land-use reforms, but only those that might negatively impact the value of their own property. Despite these considerations, our findings regarding price preferences do lend considerable support to the hypothesis proposed by Demsas (2023). Shifting housing policy to the state level and moving away from specific neighborhood issues could actualize a widespread interest in lower housing prices.

4.2 Majorities Incorrectly Predict the Directional Effect of Regional Housing-Supply Shocks on Prices

Our research reveals that while a majority of respondents desire lower housing prices in their communities, they do not believe that an increase in housing supply will yield the desired market results. Figure 4.2 illustrates the distribution of predictions about the direction of home prices and rents, categorized by tenure and preference for lower housing costs, across the three surveys.¹⁵ A significant portion, ranging from one-third to half of the participants, believe that a 10% increase in housing supply would lead to *higher* prices and rents, while only about a quarter to a third think it would decrease them.¹⁶

A key insight from Figure 4.2 is that neither homeownership status nor preferences for lower prices are clearly correlated with beliefs about the effect of additional housing supply. This challenges the notion that supply skepticism is merely a product of homeowners rationalizing their opposition to neighborhood changes by claiming that added housing supply would fail to benefit renters or

¹⁵Though some versions of the prediction question asked for approximate magnitudes or specific dollar amounts, we standardized responses to simple directional predictions (increase, decrease, or have no effect), aligning with our preanalysis plans.

¹⁶The increased skepticism observed in Survey 3 might be attributable to changes in overall economic conditions, as the surveys were conducted at different times (March 2022, August 2022, and May 2023) with varying economic conditions.

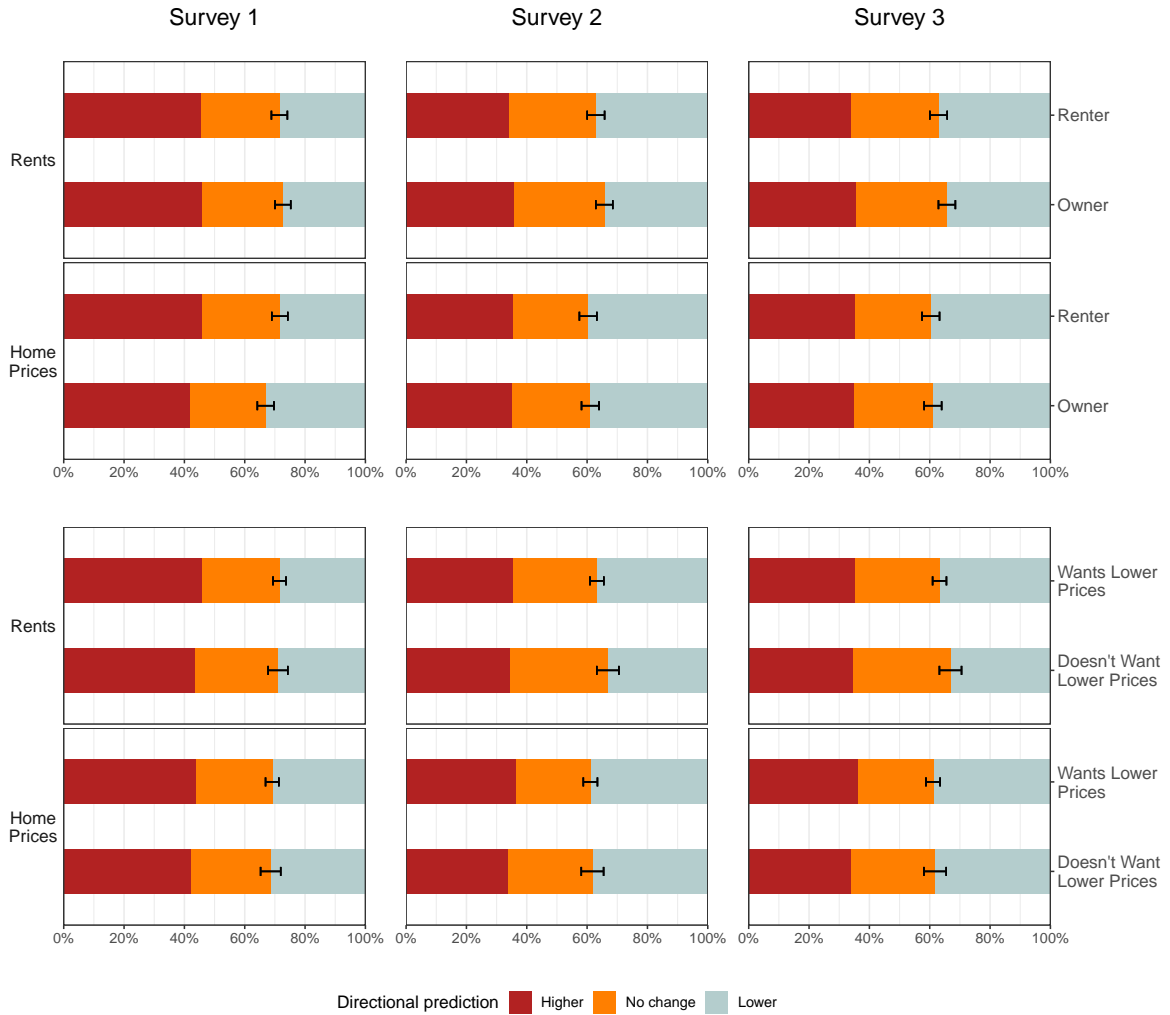


Figure 4.2: Elicited predicted effect of 10% supply shock on home prices and rents, for Surveys 1, 2, and 3. Error bars are 95% confidence intervals on the proportion of each group that is at least weakly supply-skeptical (i.e., does not believe that the supply shock would reduce prices).

potential homeowners.¹⁷

In the Supplemental Information (Appendix C), we detail robustness checks from Surveys 2 and 3. These checks demonstrate that (1) changing the supply shock’s cause does not alter the level of supply skepticism observed; (2) different question formats have minimal impact, except when respondents are asked to specify future price values under both the “supply shock” and “no supply shock” scenarios (leading to fewer “no effect” responses); and (3) altering hypothetical future prices and rents only slightly influences responses. Overall, housing-supply skepticism does not stem from question wording, and does not appear to be a rationalization of homeowner self-interest. Nor is it a response to the possibility of state preemption of local development restrictions.

4.3 People Get “Supply and Demand” Right For Most Goods and Services, But Not Housing

The price predictions depicted in Figure 4.2 reveal that people perceive housing markets differently from markets for other goods and services. Figure 4.3 demonstrates that respondents are generally more accurate in their economic predictions for supply shocks in sectors like automobiles, free trade, agriculture, and labor, compared to housing. While supply skepticism varies in these non-housing domains, reflecting recent contextual factors, it is significantly less common (15% to 50%) than for housing (60%-70%). Notably, about 85% of participants across all surveys correctly anticipated that shortages in new cars would drive up prices of used cars, whereas only 30%-40% expected an increase in new homes to lower the prices of existing homes.¹⁸

4.4 The Puzzlingly Weak Relationship Between Housing Supply Skepticism and Its Expected Correlates

Contrary to expectations based on economic theory and social psychology, housing supply skepticism did not correlate with other behavioral and psychological variables as expected. In Survey 1, we

¹⁷In the SI Appendix G, we present additional, albeit inconclusive, tests of motivated reasoning.

¹⁸The surveys coincided with widely reported problems in automobile production. Practical experience in markets might account for the higher accuracy in predicting car prices.

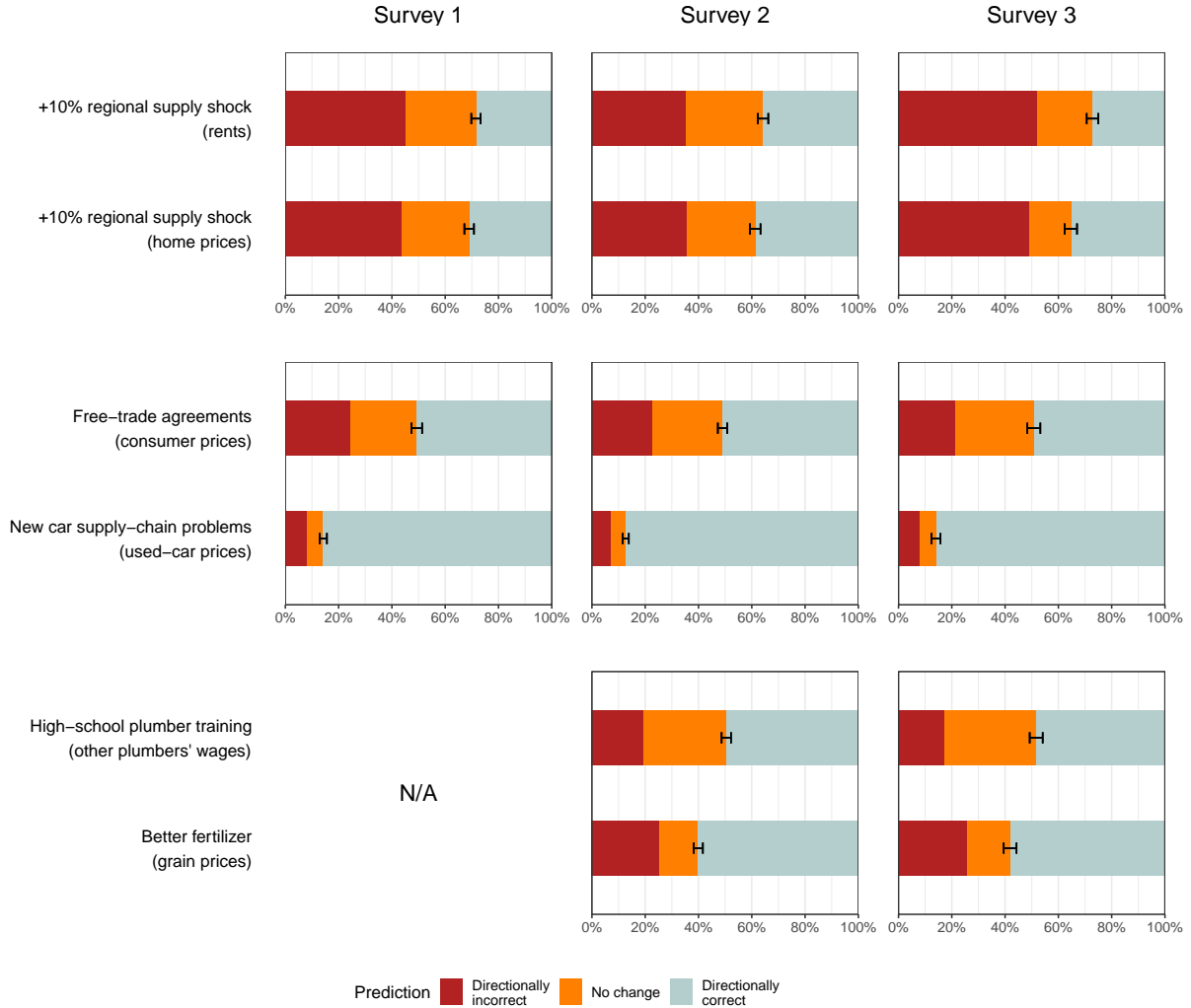


Figure 4.3: Beliefs about price effects of housing vs. non-housing supply shocks, Surveys 1-3.

anticipated a link between responses to the chain-of-moves prediction (more vacancies in middle and lower-income areas due to new upper-income housing) and the belief that a regional shock would lower existing home prices. We also expected a strong negative correlation between housing supply skepticism and economic knowledge, as indicated by responses to non-housing supply shock questions. In Survey 2, we hypothesized that those observing new housing in high-price areas would be more skeptical about the positive price effects of regional supply shocks. We also thought that zero-sum thinkers would show higher levels of supply skepticism. For Survey 3, incorporating a numeracy assessment, we hypothesized that supply skepticism might be linked to a broader discomfort with numerical reasoning.

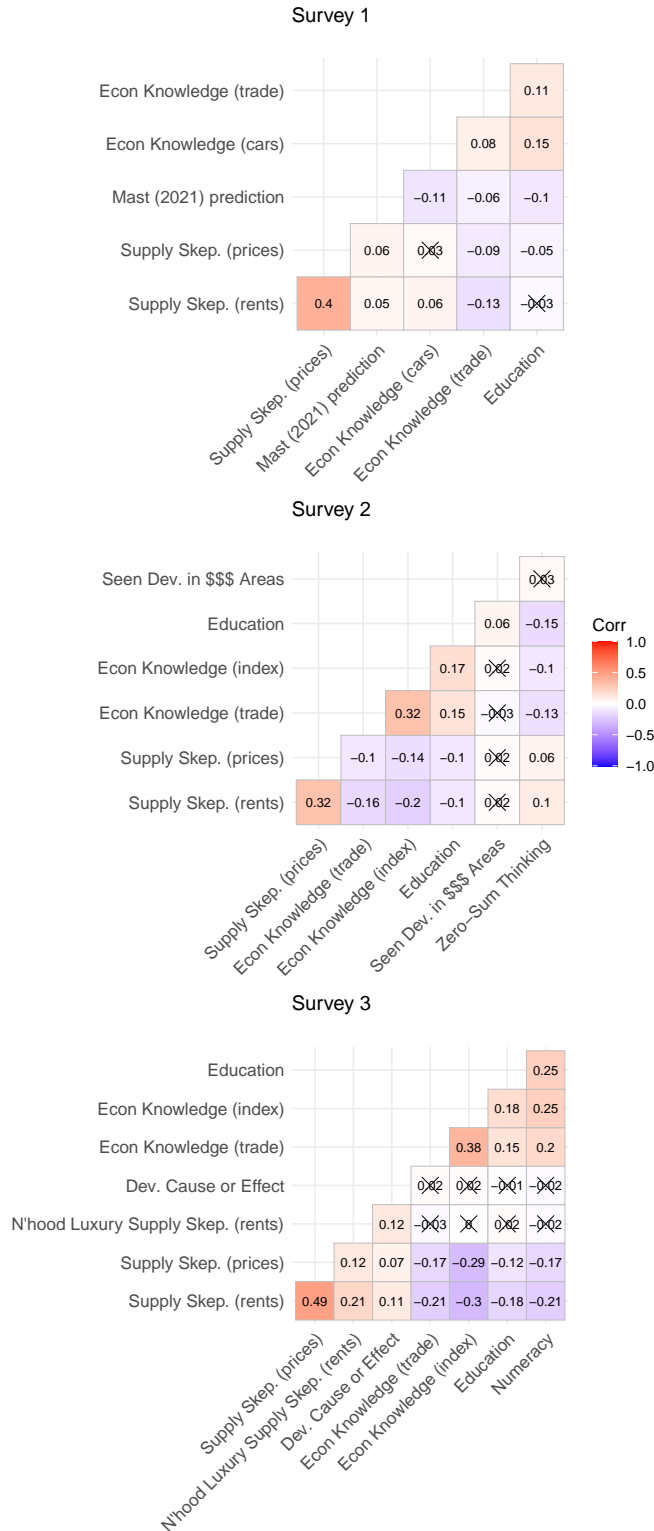


Figure 4.4: Correlation matrices for housing supply skepticism, economic literacy, numeracy, and exposure to development in high-cost areas. Price-prediction questions are encoded on a 3-point numerical scale (1 = increase, 0 = no change, -1 = decrease).

Figure 4.4 shows that our initial hypotheses about the correlations between housing supply skepticism and economic knowledge were only partially confirmed. Surveys 2 and 3 revealed only moderate negative correlations between housing supply skepticism and an economic-knowledge index derived from the non-housing supply-shock questions ($r = -.2$, $r = -.3$).¹⁹ While there is a relationship between housing supply skepticism and a lack of general economic understanding, they are not identical: housing supply skepticism rates are significantly higher (as shown in Fig. 4.3), and general economic knowledge accounts for only a small part of the variation in beliefs about housing supply. Furthermore, numeracy and education levels correlate in the expected direction with housing supply skepticism, but not so strongly that it appears to be the driving factor. In summary, respondents’ economic knowledge, education level, and numeracy are interrelated, but the correlations among them are not particularly strong, and no one factor individually or collectively explains much of the variance in supply skepticism.

The correlation between housing supply skepticism and chain-of-moves predictions is almost nonexistent and what correlation exists is opposite the expected direction (Survey 1; $r = 0.05$, $r = 0.06$). Nor did we find the expected “availability heuristic” relationship between housing supply skepticism and self-reports of new housing going in where prices and rents are going up (Survey 2). Zero-sum thinkers are only weakly more likely to than positive-sum thinkers to be skeptical about housing supply (Survey 2; $r = 0.08$, $r = 0.10$).

On Survey 3, we found that majorities or large pluralities embrace the view (1) that new “luxury” housing in a relatively affordable neighborhood would lead to higher rents for other housing in the neighborhood, and (2) that new development is generally the cause, not the consequence, of rising prices in the vicinity of the development (see SI Appendix ??).²⁰ These propositions are central to the ideology of elite supply skeptics (Been, Ellen and O’Regan, 2019). Yet as Figure 4.4

¹⁹Under our pre-analysis plan, we omitted the free-trade question from the economic knowledge index due to potential partisan bias and reported its correlation separately. Other items did not focus on salient, heavily debated policy issues.

²⁰Similarly, about 65% of respondents on Survey 2 said that the development of expensive new housing increases the market value of older, relatively affordable homes nearby. See SI Appendix E.2.1.

shows, there is only a modest positive correlation between supply skepticism on the regional-shock question and the neighborhood-shock question ($r = 0.21$), and an even smaller correlation between answers to the regional-shock question and the development-cause-or-consequence question ($r = 0.11$, $r = 0.07$, $r = 0.12$).

In the Supplemental Information (Appendix E), we detail the findings from the mental-model component of Survey 2. We noted a broad consensus among respondents on several effects of new housing development, particularly regarding local impacts and subsequent effects on prices and rents. However, responses to these mental-model questions did not significantly account for the variation in answers to the regional supply-shock question.

Overall, the weak correlations between housing supply skepticism and various factors—such as economic beliefs, zero-sum ideology, exposure to new development, and perceptions about the local effects of new development—imply that housing supply skepticism among the general public might not be connected to a cohesive worldview. This lack of strong associations suggests that skepticism about housing supply’s impact on the market is not necessarily grounded in any consistent set of beliefs or experiences.

4.5 The Puzzle Explained: Evidence of Low Test-Retest Consistency

We confront the intriguing issue that, despite the high salience of housing costs (Schaeffer, N.d.), people lack well-defined beliefs about how housing supply shocks affect prices. This ambiguity might indicate that beliefs about housing markets are unstable and represent a type of nonattitude ((cf. Campbell et al., 1960)). In response, we conducted tests of consistency using responses from the same respondents across multiple surveys, as well as a deliberate test-retest design on Survey 3.

An “accidental panel” discovered on Survey 2, which included about a third of Survey 1 respondents, provided an opportunity to assess the stability of respondents’ views over time. We measured test-retest consistency by calculating the proportion of matching responses to identical or similar questions encoded on a three-point scale (increase, decrease, stay the same) across the

surveys.

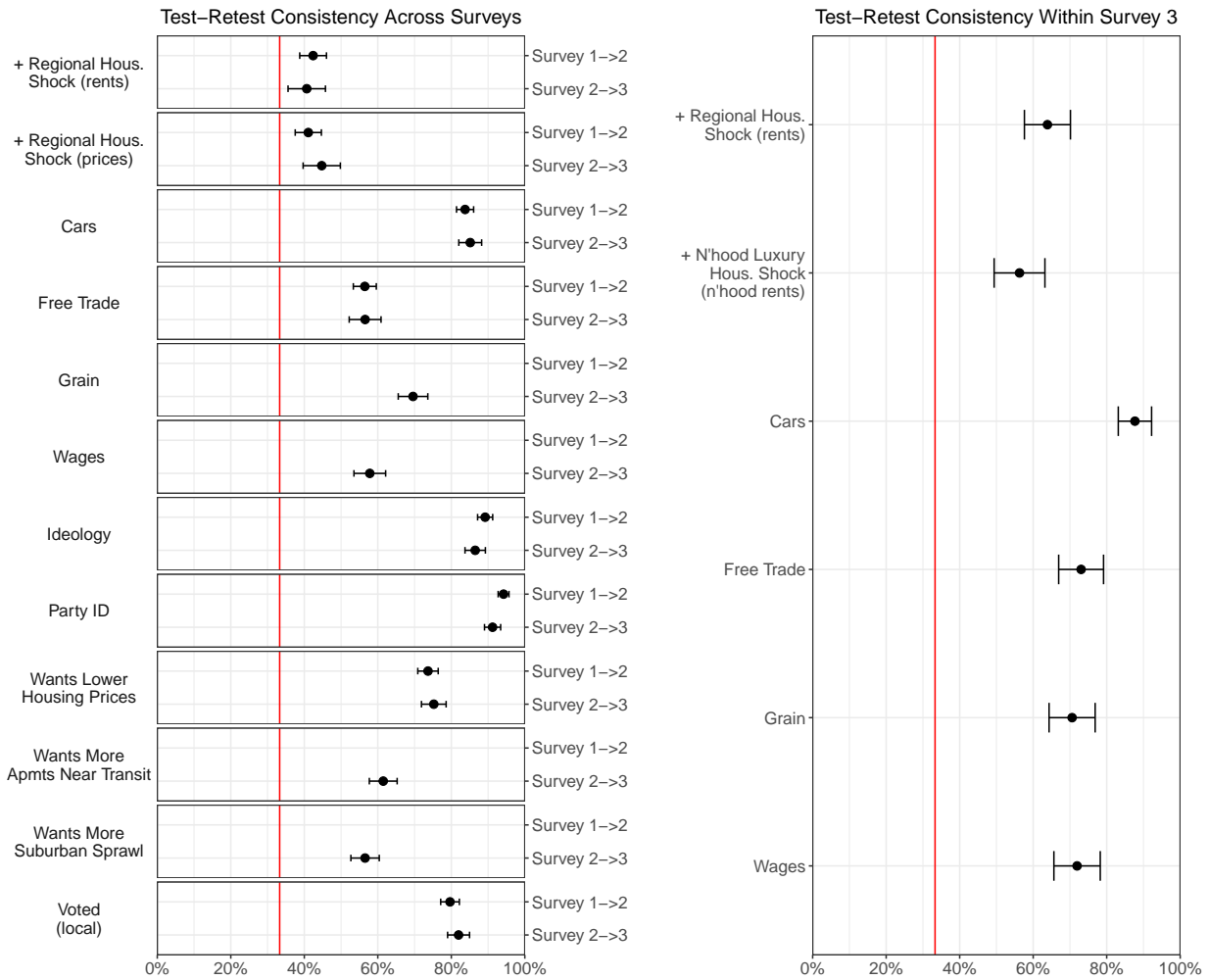


Figure 4.5: Test-retest reliability for the price prediction question and other survey items using our “serendipitous” panel data (left panel) and test-retest design within Survey 3 (right panel).

Figure 4.5 shows the consistency results for economic prediction questions and a comparison set of other three-point scale items.²¹ This set includes items with known high stability, like party identification, ideology, and local-election voter turnout, as well as preferences for future home prices and rents, and opinions on regional housing development. The vertical red line in the figure marks the 33% consistency level expected from random responses. As anticipated, responses to factual and identity questions like local election turnout, party identification, and political ideology showed

²¹All items were either originally coded on a three-point scale, or were recoded to allow inter-item comparisons.

high stability across surveys, with over 85% of respondents consistent in ideology and party ID, and 75% for local election turnout. Preferences for future home prices and rents were also relatively stable. Non-housing price prediction questions on topics like cars, free trade, grain, and skilled-trade wages had somewhat lower consistency, but still outperformed chance guessing. Support for housing development in metro areas, for example, demonstrated 60% consistency.

However, the consistency for the regional housing shock questions was notably poor, at around 40%, barely better than chance. It is crucial to note that the non-housing supply-shock questions used for test-retest consistency were identical in both surveys, while the housing-shock questions varied in Survey 2 due to randomization of the shock's cause, question format, and hypothetical future prices.

The unexpected finding of low test-retest consistency on our core supply-shock prediction question between Surveys 1 and 2 led us to incorporate a within-survey consistency test in Survey 3. At the survey's end, respondents were randomly chosen to reanswer one of the economic questions they had addressed earlier: either the regional housing supply-shock question, the impact of new "luxury" housing in affordable neighborhoods on local rents, or a non-housing economic knowledge question. To prompt thoughtful responses rather than mere recall, we made minor but irrelevant changes to the scenarios (such as switching "cars" to "trucks,"). We also preregistered a hypothesis test on inter-item differences in test-retest consistency, expecting lower consistency on housing questions compared to non-housing ones. Table 2 confirms this hypothesis, showing a 13 percentage point lower consistency on the regional supply-shock question and 21 points lower on the luxury development question compared to non-housing items. However, as Figure 4.5's second panel indicates, the difference in consistency between individual housing and non-housing questions is modest (around 8-10 percentage points), except for the cars question, which produced much more consistent responses.²²

²²We also hypothesized that respondents would more frequently select "don't know" for housing than non-housing supply-shock questions, but this was not supported. Respondents' instability on housing items does not seem to stem from *conscious* ignorance or confusion. See SI Appendix D.

The Supplemental Information (Appendix B) reveals that the average rate of within-survey retest consistency on economic shock questions (both housing and non-housing) is about 10 percentage points lower among respondents who believed the regional housing shock would increase rents, reinforcing our view that housing supply skepticism is more a nonattitude than a firmly held belief.

Furthermore, the even lower retest consistency on the neighborhood-shock question compared to the regional one implies that the public is likely as uncertain about elite supply skeptics’ gentrification narrative (if they are aware of it at all) as they are about economists’ explanations of regional supply and price relationships. This finding further undermines the idea that supply skepticism among the general public is ideologically driven.

4.6 Policy-Preference Formation in the Cognitive Supply-Side Void

How does supply skepticism matter to policy attitudes, if at all? We anticipate that urban and suburban Americans’ weak or non-existent beliefs about the relationship between housing supply and prices (referenced in Section 4.5) will translate into a similarly weak correlation between price predictions and support for supply-side land-use policies. This holds regardless of objective self-interest (owners vs. renters) or subjectively desired outcomes (preferences for future housing prices and rents in one’s city). Of course, because we cannot exogenously vary beliefs about the operation of housing markets (at least not easily), our analysis is limited to examining the relationship between price-effect predictions and attitudes towards land-use reforms.

Figure 4.6 presents this correlational analysis based on the objective measure of interest.²³

²³Although not preregistered, this figure provides a transparent examination of the covariance between zoning

Table 2: Hypothesis Test on Within-Survey Test/Retest Reliability

Item	Estimate	95% CI	p-value	Romano-Wolf p-value
(Intercept)	0.77	0.73, 0.80	<0.001	
Regional Supply Shock (rents)	-0.13	-0.20, -0.06	<0.001	<0.001
N’hood Luxury Dev. (rents)	-0.21	-0.28, -0.13	<0.001	<0.001

Note: Results of hypothesis tests specified in the preanalysis plan for Survey 3. The reference condition (intercept) averages the four non-housing economic knowledge items included on Survey 3.

Results using subjective measures are available in the SI (Appendix I.1). In Figure 4.6, the first column correlates regional-shock price predictions with support for upzoning in Survey 1, the second with state preemption of upzoning in Survey 2, and the third with support for banning new market-rate development on potential affordable housing sites, a policy favored by elite supply skeptics (Been, Ellen and O’Regan, 2019).

Figure 4.6 presents this correlational analysis based on the objective measure of self-interest (self-reported housing tenure).²⁴ Results using subjective measures are available in the SI (Appendix I.1). In Figure 4.6, we present correlates of respondents’ housing price predictions with different policy preference items: support for upzoning in Survey 1, state preemption of upzoning in Survey 2, and, from Survey 3, support for banning new market-rate development on potential affordable housing sites, a policy favored by supply-skeptical policy advocates (Been, Ellen and O’Regan, 2019).

While price predictions and upzoning support are correlated in the expected direction, the difference in upzoning preferences between "supply optimists" and "supply skeptics" is modest, particularly among renters.²⁵ No correlation exists between regional-shock price predictions and support for land banking (a “supply skeptical” policy). Renters largely favor land banking, while homeowners are more skeptical, but beliefs about the effect of housing supply do not moderate preferences in either group.²⁶

Given that most people desire lower housing prices and rents but lack a clear understanding of the supply-price relationship, they might turn to “folk economics” in adopting housing-policy preferences. Folk economic reasoning has broad appeal because it personalizes economic problems:

reform support and beliefs about price impacts. Survey 2 included preregistered exploratory regression models that are discussed in SI Appendix I.4.

²⁴Although our analysis was not preregistered, this figure provides a transparent examination of the covariance between zoning reform support and beliefs about price impacts. Survey 2 included preregistered exploratory regression models that are discussed in SI Appendix I.4.

²⁵Surveys 1 and 2 also explored a risk-aversion hypothesis (Fischel, 2001; Hankinson, 2018), examining correlations between upzoning support and anxiety about its impact on property values for homeowners or rental values for renters. The findings, reported in SI Appendix I.2, are inconclusive.

²⁶As shown in SI Appendix I.3, there is even a *positive* correlation between support for land banking and various upzoning proposals ($r = 0.13$ to 0.23), indicating that those who favor more housing development also tend to support anti-YIMBY policies to ban new market-rate housing on sites for potential future affordable housing.

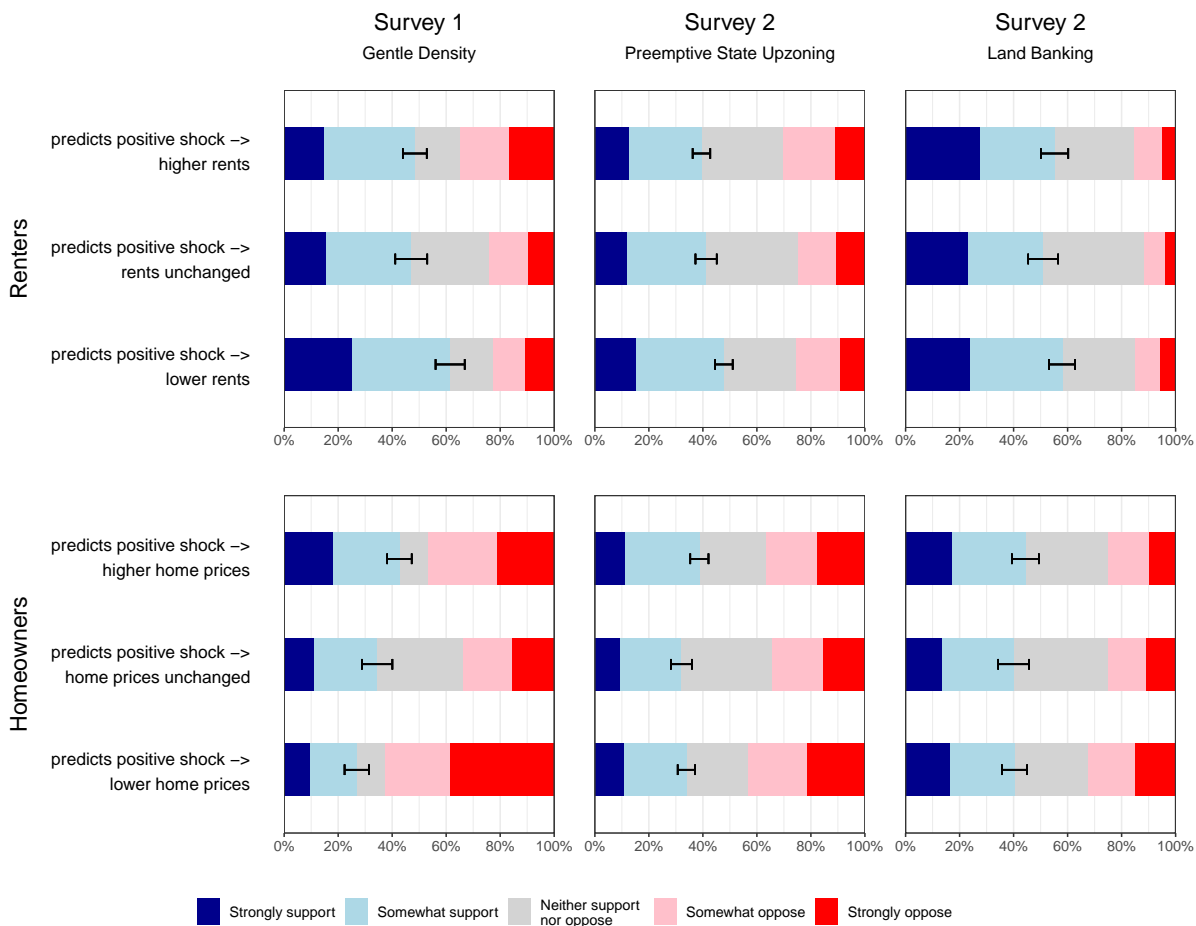


Figure 4.6: Support for housing policies as a function of tenure and elicited price predictions. Survey 1 elicited support for allowing larger 2-4 unit buildings in neighborhoods of single-family homes. Survey 2 elicited support for three preemptive state upzoning proposals, and also asked whether the respondent favored banning market-rate development on sites that could be developed for affordable housing in the future (“land banking”). Question wording is provided in SI Appendix A

specific actors, rather than impersonal market forces, are held to drive economic outcomes (Rubin, 2003; Boyer and Petersen, 2018). Consequently, public narratives blaming landlords as “price gougers” may resonate more than explanations about supply restrictions enabling high prices. This logic is often used by activists in a populist “blame game” against perceived bad actors, typically targeting groups like developers and investors who actually contribute to housing supply and whose actions to add more units to the market could reduce prices in the aggregate (Monkkonen and

[Manville, 2019](#)).

In Surveys 2 and 3, we explored public perception of responsibility for high housing prices. Participants identified the main culprits from a list of eleven actors. Housing providers, such as developers and landlords, received most of the blame, while groups typically held accountable by political scientists and economists, like environmentalists, anti-development activists, and homeowners, were seldom blamed (Figure 4.7).

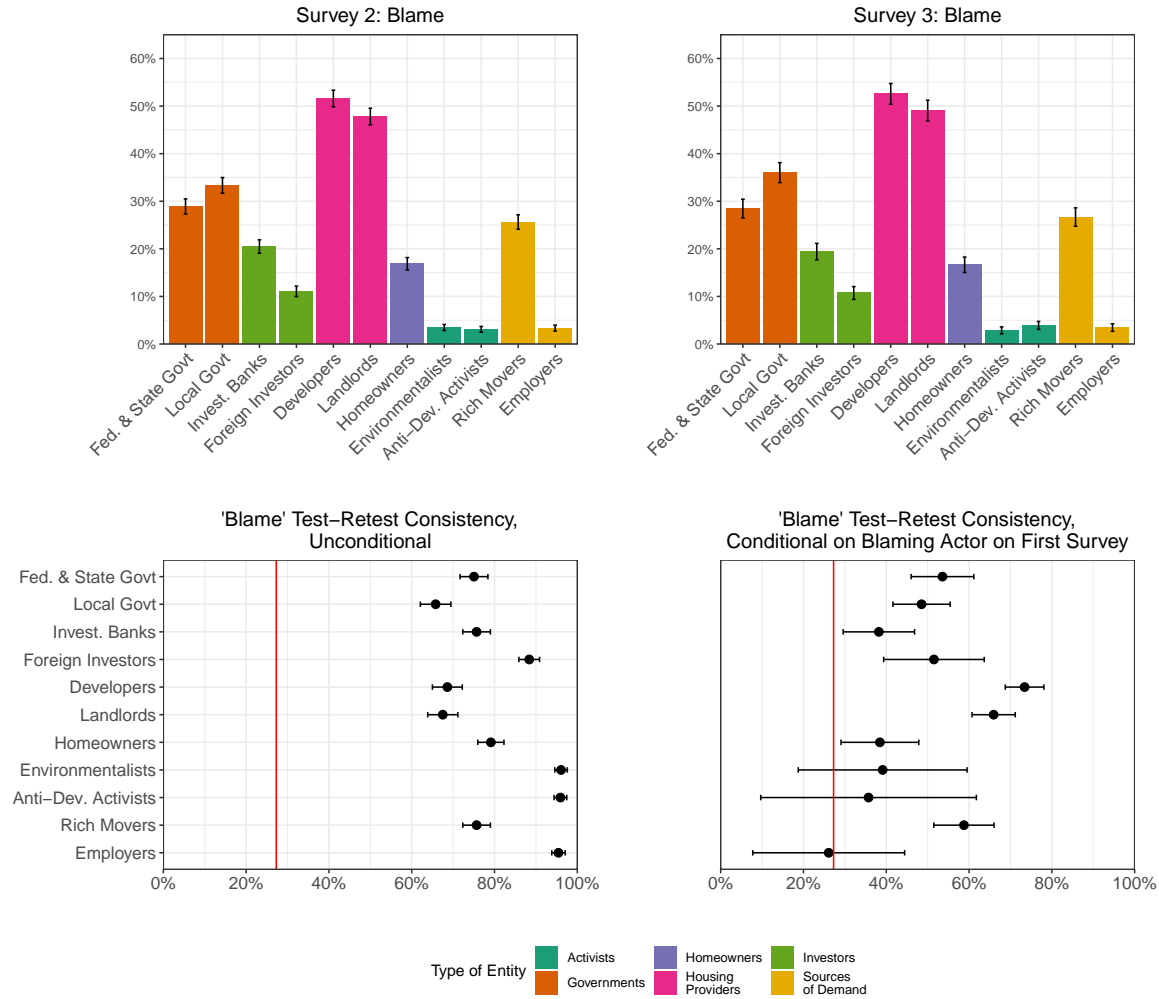


Figure 4.7: Attribution of blame for “high housing prices in your area.” Respondents were allowed to select up to three actors. The plots on the top row shows that the aggregate distribution of responses was extremely similar on both surveys. The plots on the bottom row provide actor-specific measures of test-retest consistency. The bottom-left panel treats a response as consistent if the respondent either listed, or failed to list, the actor on both surveys. The bottom-right panel conditions on respondents who blamed the actor on Survey 2 and codes a Survey 3 response as consistent only if the actor was also blamed on the latter survey.

Our accidental panel showed that blame attributions are relatively stable: 87.3% of panelists in Survey 3 blamed at least one actor they had blamed in Survey 2 (95% CI: 84.7%, 89.9%). Test-retest consistency was also analyzed for group in our lineup of suspects, revealing that those who blamed developers or landlords in Survey 2 were likely to do so again in Survey 3. In contrast, less frequently chosen options like environmentalists and anti-development activists were reselected

at rates comparable to random choice.

The Supplemental Information shows that homeowners and renters mostly blame the same groups, with some variations: renters lean towards blaming landlords, while homeowners more often blame developers (Figure I.5). However, there are inconsistencies, such as the lack of correlation between blaming developers and landlords (Figure I.6). Moreover, blame attributions only weakly correlate with support for land-use liberalization or land banking and with partisanship (Figure I.6).

It appears that most urban and suburban voters have weakly formed views on land-use policy and the interest groups influencing these policies, despite caring about outcomes like housing prices and rents. Voters' lack of strong partisan guidance on supply-enhancing or restrictive policies (with the exception of some Democratic alignment with transit-oriented development, see SI Figure I.6) leaves them uncertain. Presidential candidates often avoid the topic, possibly due to the influence of local zoning control advocates (Stegman, 2019; Weaver, 1986). In this confusion, voters may rely on blame-game cues to guide their opinions, potentially opposing policies or candidates seen as aligned with developers or landlords.

In the SI, we show that homeowners and renters mostly blame the same groups, and differ in expected ways: renters are more likely to name landlords and homeowners more likely to name developers (Figure I.5). Even so, puzzling patterns remain. For example, blaming developers is *not* correlated with blaming landlords (Figure I.6). And blame attributions are only very weakly correlated with support for either land-use liberalization or land banking (Figure I.6). The correlations with partisanship are also very modest (Figure I.6).

5 Discussion and Conclusion

Some political actors in big cities view supply skepticism as an ideology, leading to supply-limiting policies such as those that prohibit new market-rate housing on potential sites for subsidized housing (Been, Ellen and O'Regan, 2019). Our study shows that the general public's apparent skepticism is

far from coherent and may more accurately be described as 'supply naivete.'

Over two-thirds of urban and suburban Americans believe that a significant, exogenous increase in their region's housing stock would not reduce prices. Their answers to questions about housing supply shocks are less consistent than their responses to similar questions on markets for agricultural commodities, construction labor, and consumer goods. In these other markets, they are more likely to accurately predict that negative supply shocks would increase prices and positive shocks would decrease them.

Urban and suburban Americans do not appear to possess a coherent framework for understanding the relationship between housing supply and prices, and their beliefs about housing are far less correlated with other economic beliefs than we initially hypothesized. General economic knowledge has a positive but nevertheless small correlation with correct responses about housing supply and prices. Supply skepticism thus appears not to be a simple proxy for economic understanding. Other factors, such as a tendency to engage in zero-sum thinking, or self-reported exposure to new housing development have even less explanatory power. It remains unclear why people seem to have a much harder time applying the simple supply-and-demand heuristic to questions about housing markets.

The inconsistent and unstable responses carry over into responses on policy preferences. Majorities or near-majorities of respondents align with the positions of market-based housing critics: they favor development-limiting 'land banking' and believe that new development in affordable areas increases prices nearby. However, these views do not coalesce in observed inter-item correlations in a way that could be described as a coherent "supply skeptical" ideology (Zaller, 1992). Respondents present low consistency in responses about the price effects of regional and local housing supply shocks, and there is a weak to nonexistent relationship between predictions about supply-shock price effects and housing-policy preferences. In fact, the apparent confusion extends to their different policy positions: there is a positive correlation between support for upzoning (pro-supply) and land-banking (anti-supply).

The surprising twist in our findings is that people do not have a consistent schema for

understanding the operation of markets, except when it comes to adopting “folk economics” (Rubin, 2003) and assigning blame to specific profit-seeking actors. When asked about the causes of high housing prices, respondents across the political spectrum typically blame developers and landlords, two groups who personify market-rate housing. And, more significantly, approximately 80 percent of respondents believe not that developers build in places where prices are likely to increase, but that they cause prices to increase when they build.

Our findings have significant implications for the politics of housing. They suggest that the YIMBY movement’s preferred solution of shifting housing politics to the state level may be fraught with risk. We are not the first to raise this concern. Ellickson (1977) and Fischel (2001) suggested that such a reallocation of regulatory authority might favor “homevoters,” who tend to be more generally politically active than renters (Yoder, 2020; Sahn, 2022). Our findings at first suggest that this would not be all that harmful to state-level YIMBY politics: majorities of renters and homeowners alike say that they prefer lower housing prices and rents. However, because these majorities do not believe that increased housing supply will lead to lower prices, they are unlikely to support state-law changes that enable more supply. Instead, voters who do not “think like economists” (Caplan and Miller, 2010) may resort to simple folk-economic heuristics. The result could be more regulations and restrictions on negatively perceived groups: the developers and landlords who build and provide housing.²⁷

Our work also points to opportunities for future research. Since most people have a limited and unstable understanding of housing markets and supply-oriented solutions, education and persuasion have the potential to change public opinion. Previous research has shown modest effects of informational and persuasive treatments on preferences for building more apartments in one’s area, but these studies did not measure economic beliefs (Marble and Nall, 2021). Efforts by YIMBY activists, such as persuasive videos explaining concepts like filtering, have not been empirically

²⁷Alternatively, one reason to remain sanguine could be that public opinion does not matter. If voters remain largely indifferent and on the sidelines, interest groups may be able to influence state housing policy through legislative, administrative, and judicial maneuvering—what Lowi called “interest group liberalism” (Lowi, 1969).

tested for their effectiveness (Mast, 2021; Sightline Institute, 2017). However, educating the public about research studies on various economic topics has been shown to “narrow the gap” in beliefs between economists and laypersons (Haaland and Roth, 2020; Stantcheva, 2021; Roth, Settele and Wohlfart, 2022; Müller and Gsottbauer, 2021; Haaland and Roth, forthcoming). and insights from these studies might be extended to housing.

A potential avenue for future research is to understand why usual sources of political information—notably partisan elites—are not endowing voters with more stable beliefs and preferences about a highly salient economic topic. A major reason for voters’ lack of clarity may be that they receive few signals about housing policies from their usual source of political information—their preferred party’s elites (Lenz, 2013). Voters’ lack of strong partisan guidance on supply-enhancing or restrictive policies leaves them uncertain.²⁸ Indeed, politicians often avoid the topic of housing production, possibly bowing to the influence of pro-zoning local control advocates (Stegman, 2019; Weaver, 1986). In the resulting confusion, voters may revert to folk-economic heuristics—the “blame game”—to guide their opinions, potentially opposing policies or candidates seen as aligned with developers or landlords.

Beyond the politics of housing, the findings here contribute to long-running research around voter competence and its impact on policy-making (Campbell et al., 1960; Bartels, 2005; Lewis-Beck et al., 2008; Ansolabehere, Rodden and Snyder, 2008; Caplan, 2011; Caplan and Miller, 2010; Achen and Bartels, 2016; Dal Bó, Dal Bó and Eyster, 2018, e.g.). It has been observed that national policies, like taxation, often do not align with the average voter’s interests because of voter ignorance (Bartels, 2005). Local government issues have long seemed to be the exception, as voters are better able to see the link between government action and outcomes (Citrin and Green, 1990). While voters do seem to have a clear response to highly localized development threats and perceive “bad actors” involved in housing development, they do not as easily draw the connections between housing supply and overall housing market outcomes. Over time, this might change, particularly if messaging from

²⁸We find some modest evidence for partisan divides in our data. For example, Democrats appear more supportive of transit-oriented development, see SI Figure I.6).

some Democratic Party elites creates additional 'supply side progressivism' (Klein, 2021), as voters "follow the leader" (Lenz, 2013). However, it is more probable that public misconceptions will cause resistance to policies supported by developers or landlords. Misunderstandings among voters about the causes of high housing costs may contribute to housing shortages and economic inequality, as populist beliefs prevail over policies known to lower housing prices and rents.

References

- Achen, Christopher H. and Larry M. Bartels. 2016. *Democracy for realists*. Princeton, NJ: Princeton University Press.
- Acolin, Arthur and Susan Wachter. 2017. "Opportunity and Housing Access." *Cityscape* 19(1):135–150.
- Albouy, David and Gabriel Ehrlich. 2018. "Housing Productivity and the Social Cost of Land-Use Restrictions." *Journal of Urban Economics* 107:101–120.
- Andre, Peter, Ingar Haaland, Christopher Roth and Johannes Wohlfart. 2021. "Inflation Narratives."
- Ansolabehere, Stephen, Jonathan Rodden and James M Snyder. 2008. "The Strength of Issues: Using Multiple Measures to Gauge Preference Stability, Ideological Constraint, and Issue Voting." *American Political Science Review* 102(2):215–232.
- Azen, Razia and David V. Budescu. 2003. "The Dominance Analysis Approach for Comparing Predictors in Multiple Regression." *Psychological Methods* 8(2):129.
- Babcock, Richard F. 1966. *The Zoning Game: Municipal Practices and Policies*. Madison, WI: University of Wisconsin Press.
- Bartels, Larry M. 2005. "Homer Gets a Tax Cut: Inequality and Public Policy in the American Mind." *Perspectives on Politics* 3(1):15–31.

- Been, Vicki, Ingrid Gould Ellen and Katherine O'Regan. 2019. "Supply Skepticism: Housing Supply and Affordability." *Housing Policy Debate* 29(1):25–40.
- Bhattacharjee, Amit, Jason Dana and Jonathan Baron. 2017. "Anti-Profit Beliefs: How People Neglect the Societal Benefits of Profit." *Journal of Personality and Social Psychology* 113(5):671.
- Blendon, Robert J., John M Benson, Mollyann Brodie, Richard Morin, Drew E. Altman, Daniel Gitterman, Mario Brossard and Matt James. 1997. "Bridging the Gap Between the Public's and Economists' Views of the Economy." *Journal of Economic Perspectives* 11(3):105–118.
- Boyer, Pascal and Michael Bang Petersen. 2018. "Folk-Economic Beliefs: An Evolutionary Cognitive Model." *Behavioral and Brain Sciences* 41.
- Campbell, Angus, Philip E Converse, Warren E Miller and Donald E Stokes. 1960. *The American Voter*. University of Chicago Press.
- Caplan, Bryan. 2001. "What makes people think like economists? Evidence on economic cognition from the "Survey of Americans and Economists on the Economy"." *The Journal of Law and Economics* 44(2):395–426.
- Caplan, Bryan. 2002. "Systematically biased beliefs about economics: Robust evidence of judgemental anomalies from the survey of Americans and economists on the economy." *The Economic Journal* 112(479):433–458.
- Caplan, Bryan. 2011. *The Myth of the Rational Voter: Why Democracies Choose Bad Policies*. In *The Myth of the Rational Voter*. Princeton University Press.
- Caplan, Bryan and Stephen C. Miller. 2010. "Intelligence Makes People Think Like Economists: Evidence from the General Social Survey." *Intelligence* 38(6):636–647.
- Card, David, Jesse Rothstein and Moises Yi. 2023. *Location, Location, Location*. NBER Working Paper w31587 National Bureau of Economic Research.
- URL:** <https://www.nber.org/papers/w31587>

- Chetty, Raj, Nathaniel Hendren and Lawrence F. Katz. 2016. “The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment.” *American Economic Review* 106(4):855–902.
- Chinoy, Sahil, Nathan Nunn, Sandra Sequeira and Stantcheva Stefanie. 2023. Zero Sum Thinking and Roots of U.S. Political Divides. Technical report National Bureau of Economic Research.
- Citrin, Jack and Donald Philip Green. 1990. “The Self-Interest Motive in American Public Opinion.” *Research in Micropolitics* 3(1):1–28.
- Dal Bó, Ernesto, Pedro Dal Bó and Erik Eyster. 2018. “The Demand for Bad Policy When Voters Underappreciate Equilibrium Effects.” *The Review of Economic Studies* 85(2):964–998.
- Danielson, Michael N. 1976. *The Politics of Exclusion*. New York: Columbia University Press.
- Demas, Jerusalem. 2023. “Colorado’s Ingenious Idea for Solving the Housing Crisis: And Why Local Governments Hate It.” *The Atlantic* .
URL: <https://www.theatlantic.com/magazine/archive/2023/07/local-government-power-nimby-denver/674164/>
- Dougherty, Conor. 2021. *Golden Gates: The Housing Crisis and a Reckoning for the American Dream*. Paperback ed. New York: Penguin.
- Einstein, Katherine Levine, David M Glick and Maxwell Palmer. 2019. *Neighborhood Defenders: Participatory Politics and America’s Housing Crisis*. Cambridge University Press.
- Einstein, Katherine Levine, Joseph T. Ornstein and Maxwell Palmer. 2019. Who Represents the Renters? Technical report Working Paper.
- Ellickson, Robert C. 1977. “Suburban Growth Controls: An Economic and Legal Analysis.” *Yale Law Journal* 86(3):385–511.
- Fagerlin, Angela, Brian J. Zikmund-Fisher, Peter A. Ubel, Aleksandra Jankovic, Holly A. Derry

- and Dylan M. Smith. 2007. “Measuring Numeracy Without a Math Test: Development of the Subjective Numeracy Scale.” *Medical Decision Making* 27(5):672–680.
- Favilukis, Jack Y and Jaehee Song. 2023. “Why Zoning Is Too Restrictive.” *Available at SSRN 4535417*.
- Federal Reserve Bank of St. Louis. 2023a. “New Privately-Owned Housing Units Started: Total Units.” Accessed: 2023-08-31.
URL: <https://fred.stlouisfed.org/series/HOUST>
- Federal Reserve Bank of St. Louis. 2023b. “U.S. Median Sales Price of Houses Sold.” Accessed: 2023-08-31.
URL: <https://fred.stlouisfed.org/series/MSPUS>
- Fischel, William A. 2001. *The Homevoter Hypothesis: How Home Values Influence Local Government Taxation, School Finance, and Land-Use Policies*. Cambridge, MA: Harvard University Press.
- Glaeser, Edward and Joseph Gyourko. 2018. “The Economic Implications of Housing Supply.” *Journal of Economic Perspectives* 32(1):3–30.
- Glaeser, Edward L, Joseph Gyourko and Raven E Saks. 2005. “Why Have Housing Prices Gone Up?” *American Economic Review* 95(2):329–333.
- Goolsbee, Austan and Chad Syverson. 2023. The Strange and Awful Path of Productivity in the US Construction Sector. Technical report National Bureau of Economic Research.
- Grömping, Ulrike. 2009. “Variable Importance Assessment in Regression: Linear Regression versus Random Forest.” *The American Statistician* 63(4):308–319.
- Haaland, Ingar and Christopher Roth. 2020. “Labor Market Concerns and Support for Immigration.” *Journal of Public Economics* 191:1–10.
- Haaland, Ingar and Christopher Roth. forthcoming. “Beliefs about Racial Discrimination and Support for Pro-Black Policies.” *The Review of Economics and Statistics*.

- Hainmueller, Jens, Daniel J. Hopkins and Teppei Yamamoto. 2014. “Causal Inference in Conjoint Analysis: Understanding Multi-Dimensional Choices via Stated Preference Experiments.” *Political Analysis* 22:1–30.
- Hankinson, Michael. 2018. “When do Renters Behave Like Homeowners? High Rent, Price Anxiety, and NIMBYism.” *American Political Science Review* 112(3):473–493.
- Hankinson, Michael and Asya Magazinnik. 2023. “The Supply-Equity Trade-Off: The Effect of Spatial Representation on the Local Housing Supply.” *Journal of Politics* 85(3).
- Hansena, James and Alicia Rambaldib. 2022. “How Do Homes Transfer Across the Income Distribution? The Role of Supply Constraints.”
- Hastie, Trevor, Robert Tibshirani and Jerome H. Friedman. 2009. *The Elements of Statistical Learning: Data mining, Inference, and Prediction*. Vol. 2 Springer.
- Hills, Roderick M. and David N. Schleicher. 2011. “Balancing the Zoning Budget.” *Case Western Reserve Law Review* 62:81–113.
- Hills, Roderick M. and David Schleicher. 2020. “Building Coalitions Out of Thin Air: Transferable Development Rights and “Constituency Effects” in Land Use Law.” *Journal of Legal Analysis* 12:79–135.
- Hobbs, William R. and Daniel J. Hopkins. 2021. “Offsetting Policy Feedback Effects: Evidence from the Affordable Care Act.” *The Journal of Politics* 83(4):1800–1817.
- Hoover Institution. 2015. “Hoover Institution Golden State Poll, April 2015 [dataset].”. Accessed January 24, 2017.
- URL:** <http://hvr.co/2pRFK8y>
- Hsieh, Chang-Tai and Enrico Moretti. 2019. “Housing Constraints and Spatial Misallocation.” *American Economic Journal: Macroeconomics* 11(2):1–39.

- Inglehart, Ronald. 1981. "Post-Materialism in an Environment of Insecurity." *American Political Science Review* 75(4):880–900.
- Jackman, Mary R. 1978. "General and applied tolerance: Does education increase commitment to racial integration?" *American Journal of Political Science* pp. 302–324.
- Jackson, Kristoffer. 2016. "Do Land Use Regulations Stifle Residential Development? Evidence from California Cities." *Journal of Urban Economics* 91:45–56.
- Kahan, Dan M, Ellen Peters, Erica Cantrell Dawson and Paul Slovic. 2017. "Motivated numeracy and enlightened self-government." *Behavioural Public Policy* 1(1):54–86.
- Klein, Ezra. 2021. "The Economic Mistake the Left is Finally Confronting." *New York Times* . Accessed August 11, 2023.
URL: bit.ly/3OvxZi4
- Krstajic, Damjan, Ljubomir J Buturovic, David E Leahy and Simon Thomas. 2014. "Cross-validation pitfalls when selecting and assessing regression and classification models." *Journal of cheminformatics* 6(1):1–15.
- Lenz, Gabriel S. 2013. *Follow the Leader?: How Voters Respond to Politicians' Policies and Performance*. Chicago: University of Chicago Press.
- Lewis-Beck, Michael S, William G Jacoby, Helmut Norpoth and Herbert F Weisberg. 2008. *The American Voter Revisited*. University of Michigan Press.
- Lim, Michael and Trevor Hastie. 2015. "Learning Interactions via Hierarchical Group-Lasso Regularization." *Journal of Computational and Graphical Statistics* 24(3):627–654.
- Lowi, Theodore. 1969. "The End of Liberalism."
- Mansfield, Edward D., Diana C. Mutz and Devon Brackbill. 2019. "Effects of the Great Recession on American Attitudes Toward Trade." *British Journal of Political Science* 49(1):37–58.
- Marantz, Nicholas J and Paul G Lewis. 2022. "Jurisdictional Size and Residential Development:

- Are Large-Scale Local Governments More Receptive to Multifamily Housing?” *Urban Affairs Review* 58(3):732–766.
- Marble, William and Clayton Nall. 2021. “Where Self-Interest Trumps Ideology: Liberal Homeowners and Local Opposition to Housing Development.” *Journal of Politics* 83(4).
- Mast, Evan. 2021. “The Effect of New Market-Rate Housing Construction on the Low-Income Housing Market.” *Journal of Urban Economics* p. 103383.
- Molotch, Harvey. 1976. “The City as a Growth Machine: Toward a Political Economy of Place.” *American Journal of Sociology* 82(2):309–332.
- Monkkonen, Paavo and Michael Manville. 2019. “Opposition to Development or Opposition to Developers? Experimental Evidence on Attitudes Toward New Housing.” *Journal of Urban Affairs* 41(8):1123–1141.
- Morgan, Kimberly J. and Andrea Louise Campbell. 2011. *The Delegated Welfare State: Medicare, Markets, and the Governance of Social Policy*. Oxford, UK: Oxford University Press.
- Müller, Daniel and Elisabeth Gsottbauer. 2021. “Why Do People Demand Rent Control?”
- Olson, Mancur. 1965. *The Logic of Collective Action*. Harvard University Press.
- O’Neill, Moira, Eric Biber, Giulia Gualco-Nelson and Nicholas Marantz. 2022. “Examining Entitlement in California to Inform Policy and Process: Advancing Social Equity in Housing Development Patterns.” *Report to the California Air Resources Board* .
- Pendall, Rolf. 1999. “Opposition to Housing: NIMBY and Beyond.” *Urban Affairs Review* 35(1):112–136.
- Pierson, Paul. 1993. “When Effect Becomes Cause: Policy Feedback and Political Change.” *World Politics* 45(4):595–628.
- Roth, Christopher, Sonja Settele and Johannes Wohlfart. 2022. “Beliefs about Public Debt and the Demand for Government Spending.” *Journal of Econometrics* 231(1):165–187.

- Rózycka-Tran, Joanna, Paweł Jurek, Michał Olech, Jarosław Piotrowski and Magdalena Żemojtel-Piotrowska. 2019. “Measurement invariance of the Belief in a Zero-Sum Game scale across 36 countries.” *International Journal of Psychology* 54(3):406–413.
- Rubin, Paul H. 2003. “Folk Economics.” *Southern Economic Journal* 70(1):157–171.
- Sahn, Alexander. 2022. “Public Comment and Public Policy.” *Working Paper* .
- Sausgruber, Rupert and Jean-Robert Tyran. 2005. “Testing the Mill Hypothesis of Fiscal Illusion.” *Public Choice* 122(1):39–68.
- Sausgruber, Rupert and Jean-Robert Tyran. 2011. “Are We Taxing Ourselves?: How Deliberation and Experience Shape Voting on Taxes.” *Journal of Public Economics* 95(1-2):164–176.
- Schaeffer, Katherine. N.d. “A Growing Share of Americans Say Affordable Housing Is a Major Problem Where They Live.” Available at <https://www.pewresearch.org/short-reads/2022/01/18/a-growing-share-of-americans-say-affordable-housing-is-a-major-problem-where-they-live/>.
- Selmi, Daniel P. 2010. “The Contract Transformation in Land Use Regulation.” *Stanford Law Review* 63:591.
- Shiller, Robert J., Maxim Boycko and Vladimir Korobov. 1991. “Popular Attitudes Towards Free Markets: The Soviet Union and the United States Compared.” *The American Economic Review* 81(3):385–400.
- Sightline Institute. 2017. “Cruel Musical Chairs (or Why Is Rent So High?).”
URL: <https://www.youtube.com/watch?v=EQGQU0T6NBc&list=PLJ-MbAW4MtwW-738Bb07wgCr0MdAZmdAI&index=4>
- Stantcheva, Stefanie. 2020. Understanding Economic Policies: What Do People Know and Learn? Technical report Harvard University.
- Stantcheva, Stefanie. 2021. “Understanding Tax Policy: How do People Reason?” *The Quarterly Journal of Economics* 136(4):2309–2369.

- Stantcheva, Stefanie. 2022. "Understanding of Trade." *NBER Working Paper 30040* .
- Stegman, Michael. 2019. Eliminating Exclusionary Land Use Regulations Should Be the Civil Rights Issue of Our Time. Technical report Harvard Joint Center for Housing Studies.
URL: https://www.jchs.harvard.edu/sites/default/files/media/imp/harvard_jchs_exclusionary_zoning_civil_rig
- Tibshirani, Robert. 1996. "Regression Shrinkage and Selection via the Lasso." *Journal of the Royal Statistical Society: Series B (Methodological)* 58(1):267–288.
- Trounstine, Jessica. 2021. "You Won't be My Neighbor: Opposition to High Density Development." *Urban Affairs Review* p. 10780874211065776.
- Tversky, Amos and Daniel Kahneman. 1973. "Availability: A heuristic for judging frequency and probability." *Cognitive Psychology* 5(2):207–232.
- Weaver, R. Kent. 1986. "The Politics of Blame Avoidance." *Journal of Public Policy* 6(4):371–398.
- Wicki, Michael and David Kaufmann. 2022. "Accepting and Resisting Densification: The Importance of Project-Related Factors and the Contextualizing Role of Neighbourhoods." *Landscape and Urban Planning* 220:104350.
- Wilson, James Q. 1962. *The Amateur Democrat: Club Politics in Three Cities*. University of Chicago Press.
- Yoder, Jesse. 2020. "Does Property Ownership Lead to Participation in Local Politics? Evidence from Property Records and Meeting Minutes." *American Political Science Review* 114(4):1213–1229.
- Zaller, John. 1992. *The Nature and Origins of Mass Opinion*. Cambridge University Press.

Supplemental Information

Appendix A Details of Survey Structure and Question Wording

This Appendix provides flowchart diagrams of all three surveys, followed by tables with the exact wording of the principal survey questions.

A.1 Structure of Survey 1

Fielded in March 2022, Survey 1 (our pilot survey) cast a broad net. We elicited respondents’ understanding of land use and housing issues in their own words; we used hypothetical scenarios to tease apart “quantity skepticism” (a belief that land-use deregulation would not result in more housing) from “price skepticism” (a belief that more new housing would not reduce prices and rents for existing homes); and we challenged respondents to predict the results of Mast’s (2021) chain-of-moves study. Mast estimated the number of homes that become available to buy or rent, within five years, in a region’s middle-income and lower-income neighborhoods, due to the chain of relocation moves induced by the opening of 100 new homes in a high-income neighborhood.

Figure A.1 illustrates the structure of the pilot survey. The survey opens with basic demographic questions and, amidst the demographics, a question that asks respondents to think about their city’s future and whether they would prefer home prices and rents to be higher, lower, or the same as today, assuming no change in the economy or quality of life. It then poses open-text questions about the main issues and problems with land use and housing. Next, respondents are given a one-paragraph primer on zoning and randomly assigned to one of three hypothetical “upzoning” scenarios. In each scenario, duplexes and triplexes would be allowed on lots that are currently restricted to single-family homes and new buildings could be one-and-a-half times as tall as existing homes.²⁹ The scenarios varied in the geographic scale of the upzoning: either just the respondent’s neighborhood, or the respondent’s entire town or city, or the respondent’s state. We asked respondents whether they supported or opposed the proposed upzoning and how they thought it would affect (1) the size of their region’s housing stock, (2) home prices in their neighborhood, (3) rents in their neighborhood, and (4) rents citywide.

To distinguish price skepticism from quantity skepticism, we then elicited predictions about the effect on prices and rents for existing homes of an exogenous 10% increase in the housing stock of the respondent’s metro-region caused by the removal of development restrictions. Finally, after a few questions about economic knowledge and other topics, we provide a several-paragraph description of the design of Mast’s (2021) study and asked respondents to guess Mast’s findings about the number of existing homes freed up through chains-of-moves vacancies in a region’s middle-income and lower-income neighborhoods for every 100 new homes built in high-income neighborhoods.

This design allows us to measure quantity and price skepticism; to relate these phenomena to broader measures of economic knowledge; to examine whether price predictions correlate with respondents’ understanding of the mechanism through which the development of new housing makes existing housing more affordable regionally; and to see whether “supply skeptics” who would benefit from lower prices and rents are less supportive of allowing denser housing in single-family

²⁹Such measures have recently been adopted in cities like Minneapolis and in states like California and Oregon.

neighborhoods their counterparts who believe that a positive regional supply shock would bring down prices.

A.2 Structure of Survey 2

As explained in Section 3 of the paper, Survey 2 was designed to check the robustness of the 10% supply shock results from Survey 1. Additionally, we sought to better understand the nature of housing-supply skepticism by introducing additional questions about (1) economic knowledge (supply shocks in non-housing markets); (2) beliefs (“mental models”) about the material effect of the the posited supply shock, and, later in the survey, beliefs about how such material effects translate into prices as a general matter; (3) self-reported exposure to new development in places where prices and rents are going up; (4) beliefs about which actors are responsible for high housing prices and rents in the respondent’s area; and (5) a question about land banking, i.e., whether cities should ban the development of new market-rate housing on sites where subsidized affordable housing could be developed in the future.³⁰

The flow of Survey 2 is diagrammed in Figure A.2. The pretreatment housing questions consist of the respondent’s preference for future home prices and rents in one’s city (replicated from Survey 1); a question about which actors are responsible for high prices and rents in the respondent’s area; and a question about which level of government “has the most control over what gets built on urban and suburban land.”

After the opening block, we provide a brief description of zoning (replicated from Survey 1). Respondents then answer a battery of questions about support for state preemption of local control over housing development; questions about the price and rent effects of a 10% regional supply shock; questions about the material effects of the 10% supply shock; and two of the economic knowledge (non-housing supply shock) questions. Respondents are randomly assigned ($p = 0.5$) to answer the preemption battery before or after these other questions, as shown in Figure A.2 (placement A vs. B). (As explained in Appendix G, this randomized placement enables a weak test of motivated reasoning as an explanation for housing supply skepticism.)

Next comes the “stage 2” battery of mental-model questions, which ask about the usual effect of each “stage 1” material impact on housing prices or rents. This is followed by the zero-sum thinking battery, and then the final demographics block. The final demographics block also includes a question about support for land banking, and the question about exposure to new development in places where prices are going up.

After the final demographics block, we ask two general questions about upzoning preferences (replicated from Hoover Institution (2015)), and two more non-housing supply shock questions. The reason for splitting the non-housing supply shock questions into two blocks, separated by a range of other questions, is to minimize respondent learning or demand effects. We thought that if we placed all of the non-housing shock questions in a single block, some respondents might realize that they were being about the same thing in different ways, inducing them to use a supply-and-demand heuristic to answer the later questions in the block.

³⁰We inadvertently omitted the land-banking question from the preanalysis plan for Survey 2.

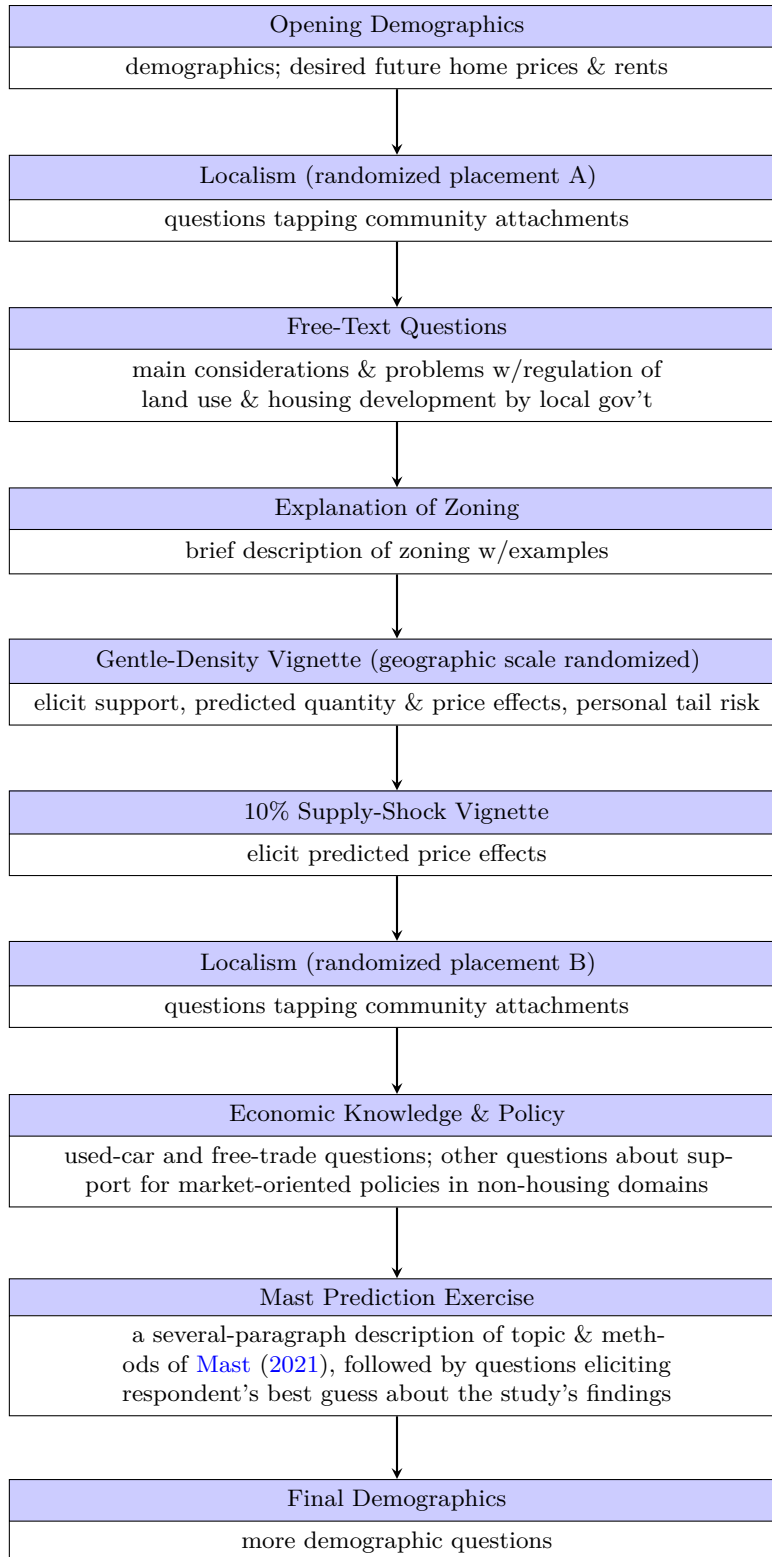


Figure A.1: Structure of Survey 1 (pilot). The questions about local community attachments, and support for market-oriented policies, are not used in this paper.

A.3 Structure of Survey 3

As explained in Section 3 of the main paper, the primary goals of Survey 3 were (1) to rule out the objection that the housing supply skepticism documented on Surveys 1 and 2 might be an artifact of question complexity; and (2) to investigate the hypothesis that housing supply skepticism is more of a non-opinion than a settled view. To this end, we introduced a new question format for the 10% regional shock question, which we call “super-simple,” and we also randomly assigned 1 in 5 respondents to answer the same questions about housing and non-housing supply shocks but with a “don’t know” option in the choice set for each question. Survey 3 also adds a new question about the local (neighborhood-level) price effects of allowing more luxury housing to be built in a relatively affordable neighborhood of an expensive city, and a question about whether new development is the cause, or the consequence, of rising prices in the area. Finally, Survey 3 includes a battery of questions about subjective numeracy, that is, whether the respondent generally likes using and reading information in quantitative form.

Figure A.3 illustrates the structure of the survey. The opening block includes the same pretreatment housing questions found on Survey 2 (preference for future home prices and rents in one’s city; attributions of blame for high prices and rents; beliefs about which level of government exercises the most control over what gets built on urban and suburban land). The explanation of zoning statement is also replicated from Surveys 1 and 2. The 10% supply-shock vignette is again conjoint-randomized, but, as noted, with a new “super-simple” elicitation format.

The retest question, designed to capture the stability of beliefs about housing and non-housing supply shocks, comes near the end of the survey. Respondents are randomly assigned to be retested on *one* of the following questions: effect of 10% regional housing supply shock on rents (super-simple format); effect of allowing more luxury housing in a relatively affordable neighborhood on rents in the same neighborhood; effect of free-trade agreements on the price of goods; effect of high-school job training program on wages for other workers in the sector; effect of supply-chain problems on the price of used cars/trucks; effect of agricultural productivity shock on the price of the agricultural product. The respondents who are randomly assigned to the “don’t know” question format are always retested on a housing-shock question (the regional shock or the neighborhood shock, with equal probability).

After the retest question, respondents receive the upzoning-preferences block and the final economic-knowledge block. These are exact replications of Survey 2 questions, and the order-randomization of the economic knowledge questions is also the same as Survey 2 (i.e., two blocks of two questions, with placement of the blocks and order of questions within blocks randomized).

Finally, respondents answer the question about whether development is the cause or consequence of rising prices, except that one out of ten respondents instead receives this question earlier in the survey, in lieu of supply-shock retest question. The reason for giving this question earlier to some respondents is to allow a low-powered test of whether respondents who answer it immediately after two non-housing supply shock questions learn from those questions and infer that developers probably choose to build where prices are going up.

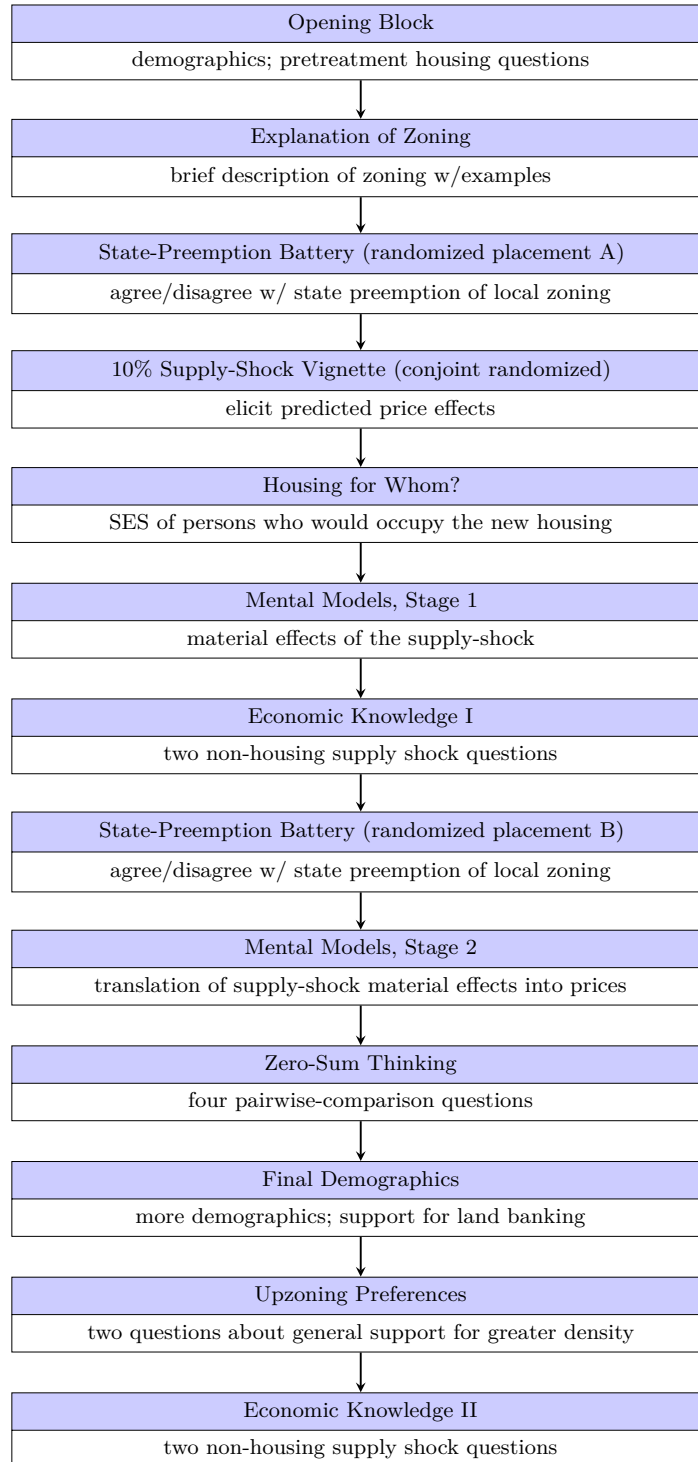


Figure A.2: Structure of Survey 2. Order of economic knowledge questions is randomized across blocks Economic Knowledge I and Economic Knowledge II. Question order within state preemption, mental model, economic knowledge, upzoning preference, and zero-sum thinking batteries is also randomized, as is the order of eliciting the supply shock’s effect on home values and rents. The order of response options (high to low or low to high) is randomized across respondents rather than across questions.

A.4 Wording of Focal Survey Questions

This sub-appendix provides a series of tables with the exact wording of focal survey questions. It complements the abbreviated descriptions of the questions in Table 1 of the paper.

A.4.1 Regional Housing Supply Shock

Our principal device for testing the robustness of directional predictions about the home-price and rent effects of a large regional supply shock is a conjoint-randomized variation on the pilot survey’s 10% regional supply shock scenario (Hainmueller, Hopkins and Yamamoto, 2014). On Survey 2, we independently randomize the *cause of the supply shock*, the *format* of the price-elicitation question, and, for elicitation formats that use it, the *counterfactual future price or rent* of a typical home in the respondent’s town or city, i.e., the price or rent that would obtain in the absence of the supply shock. On Survey 3, we also independently randomize the cause of the supply shock and the format of the price-elicitation question, replicating one of the causes and one of the formats from Survey 2.

By estimating directional home value and rent predictions under each attribute level, conditional on the joint distribution of other attributes, we can see whether the supply skepticism observed on Survey 1 may have been an artifact of an idiosyncratic feature of that survey, such as a difficult question format or too-low counterfactual prices.

Table 1 shows how the surveys communicated variations of the attribute, *cause of the supply shock*. Across all variations, the number of housing units in the respondent’s metro region increases by 10% over a five-year period, but in one case (“tech”) this results from a technological innovation that improves the productivity of homebuilders, and in the others, it results from a state law preempting local development restrictions. On Survey 2, the preemptive state law authorizes either more duplexes, triplexes, and fourplexes in neighborhoods of single-family homes (“denser neighborhoods”); more apartment and condo buildings near train and bus lines (“TOD,” or transit-oriented development); or more suburban homes on farms and open space outside of cities (“sprawl”.) On Survey 3, the nature of the preemptive state law isn’t specified beyond “removing local development restrictions.”

If people reason about price effects mainly in terms of regional supply and demand, these variations in the type and distribution of new homes are unlikely to have much effect on their directional predictions of the effect of the shock on the future price or rent of a typical existing home in the respondent’s city. Houses within a regional market are substitutes for one another, so a large, exogenous increase in the size of the regional stock will put downward pressure on prices everywhere. But if respondents reason mainly in terms of local amenity and disamenity effects in their own neighborhood, or if they project “bad” outcomes from conniving developers associated with zoning deregulation, we may observe differences across the scenarios. Homeowners, for example, may expect the “denser neighborhoods” scenario (which portends a change in single-family neighborhoods) to reduce prices more than the “transit-oriented” (TOD) scenario (which concentrates development in areas that may already have an urban character). Renters may fear that the TOD scenario would cause gentrification and rising rents in relative affordable, apartment-heavy neighborhoods. And, across our scenarios, respondents with a Manichean economic worldview may associate the loosening of zoning regulations with private-developer capture of the government—and therefore project “bad consequences”—while engaging in more standard supply-and-demand reasoning if the supply shock is just the byproduct of homebuilders becoming more productive.

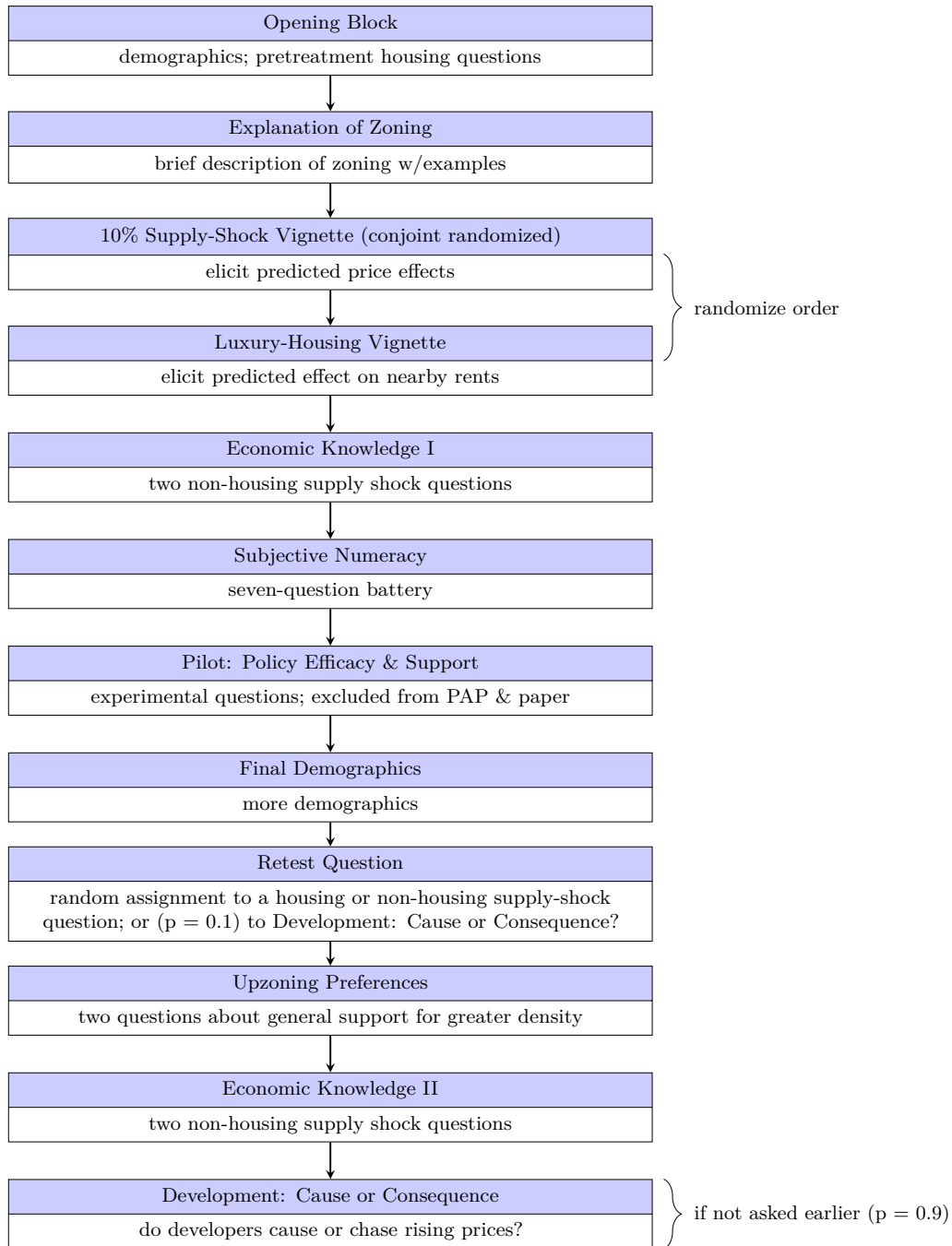


Figure A.3: Structure of Survey 3. The order of economic knowledge questions is randomized across blocks Economic Knowledge I and Economic Knowledge II. The order of subjective numeracy questions is randomized within the block. The order of response options (high to low or low to high) is randomized across respondents rather than across questions.

Table 1: Levels and question wording for the vignette attribute, *Nature of Supply Shock*.

Level	Question Text
<i>Survey 1</i>	
NA	Imagine that cities and towns across your metropolitan region remove development restrictions. This causes the total housing stock in the region to grow by an additional 10% over the next five years. For example, a region that would have had 1,000,000 residential units in five years (without any change to development restrictions) will instead have 1,100,000 units.
<i>Survey 2</i>	
Transit-Oriented Development	Imagine that \$State passes a law to ensure that apartment and condo buildings may be developed near rail and bus stops . The new law overrides local zoning restrictions. It causes a building boom. In five years, the number of homes and apartments in your metropolitan region is 10% larger than it otherwise would have been. For example, a region that would have had 1,000,000 residential units in five years without any change to development restrictions will instead have 1,000,000 units. This is three times the rate of housing growth in the nation as a whole.
Denser Neighborhoods	Imagine that \$State passes a law to ensure that single-family homes may be replaced with duplexes, triplexes, and fourplexes (2-4 unit buildings) . The new law overrides local zoning restrictions. It causes a building boom.... (<i>Vignette continues as above.</i>)
Sprawl	Imagine that \$State passes a law to ensure that suburban homes may be developed on farmland and open space near cities . The new law overrides local zoning restrictions. It causes a building boom.... (<i>Vignette continues as above.</i>)
Technology	Imagine that new manufacturing processes increase the productivity of homebuilders . This causes a building boom.... (<i>Vignette continues as above.</i>)
<i>Survey 3</i>	
State Preemption	Imagine that \$State passes a law that removes local restrictions on housing development. It causes a building boom. In five years, the number of homes and apartments in your metropolitan region is 10% larger than it otherwise would have been. For example, a region that would have had 1,000,000 residential units in five years without any change to development restrictions will instead have 1,100,000 units. {This is three times the rate of housing growth in the nation as a whole.}
Technology	Imagine that a new manufacturing process increases the productivity of homebuilders . It causes a building boom. In five years, the number of homes and apartments in your metropolitan region is 10% larger than it otherwise would have been. For example, a region that would have had 1,000,000 residential units in five years without any change to homebuilders' productivity will instead have 1,100,000 units. {This is three times the rate of housing growth in the nation as a whole.}

Notes. Highlighted text depends on the attribute level; other text is independent of levels (within a survey). Bold-font terms that begin with \$ represent piped-text strings that depend on the respondent's zip code or answers to previous survey questions. Phrases in curly brackets are randomized to appear with probability 0.5. The vignette description on Survey 3 varies with the elicitation format (simple vs. super-simple). Shown here is the "simple" format, as the super-simple version does not employ a vignette statement on a separate screen preceding the price-elicitation question. See Table 2 for the simple vs. super-simple comparison.

Levels and question wording for the attribute *Elicitation Format* are shown in Table 2. Survey 1 used the “Complex” format, which posits the future rent or price (in five years) of a dwelling unit in the respondent’s town or city and then asks whether the unit’s rent (home price) would be higher than the counterfactual, lower than the counterfactual, or unchanged from the counterfactual, if the supply shock occurred. The counterfactual value is fed from a database constructed from Zillow local home and rent values.³¹

Whereas the Complex elicitation format asks respondents to call to mind a house with a specified value and then engage in expressly counterfactual reasoning, the “Simple” format just asks how the shock would affect the market value (rent) of a typical home (apartment) in the respondent’s city.³²

In the Potential Outcomes elicitation format, respondents are asked early in the survey to estimate the current and in-five-years price of a typical home or rental unit in their city. Later, they are presented with the supply-shock scenario and asked to predict the typical home’s value (rent) in five years given the shock. Any integer value may be entered as a prediction. In contrast to the other formats, an exact “null effect” option is not built into the answer choices. This may induce more people to give a directional estimate.

³¹Home and rent values are taken from the Zillow Home Value Index (ZHVI) and the Zillow Observed Rent Index (ZORI) respectively. Both indices observe home prices and rents at the zip code level. The ZHVI is a proprietary measure that represents a typical value for home prices between the 35th and 65th percentile of a given geography and includes data on both single-family detached homes and condominiums. The ZORI measures the “typical” market rate rent in a given geography and is calculated by weighting the prevalence of various types of rental units in an area to account for changes in the type of rental stock that may enter the market at a given time. Because we are using these values only in construction of counterfactuals for price elicitation, the proprietary “black box” origins of these measures—which are widely used and accepted by consumers—does not compromise our study procedures. Data for both indices is available at <https://www.zillow.com/research/data/>.

³²Respondents are then asked a follow-up question about how much more or less a given home with a posited counterfactual value would be worth, in five years, under the scenario, but we do not use answers to the follow-up question in our pre-registered design. We modeled this format on a pilot-survey question about the effect of automotive supply-chain problems on the price of used cars to maintain simplicity. Nearly all respondents answered the supply-chain question correctly, which suggested that the simple question wording would limit cognitive burdens.

Table 2: Levels and question wording for the vignette attribute, *Elicitation Format*.

Level	Question Text
<i>Survey 1</i>	
Complex	<p>Consider a home in \$City. Assume that its fair market value in five years would be \$Price if development restrictions did not change. Do you think the same home would be worth more or less than that if the removal of development restrictions caused a 10% increase in your metro region's housing stock?</p> <p>Assume that the condition of the home stays the same. [It would be worth a lot more if the housing stock increased by 10%; ... a little more ...; It's value would not change ...; ... a little less ...; ... a lot less ...]</p>
<i>Survey 2</i>	
Complex	<p>Scenario recap: The new state law ...</p> <ul style="list-style-type: none"> allows more suburban homes on farmland and open space near cities causes your region's housing stock to grow by an additional 10% over the next five years <p>Consider a home in \$City. Assume that its market value in five years would be \$Price if \$State did not enact the law allowing more development. In the scenario recapped above, where the state removes development restrictions, the same unit's market value would be...</p> <p>[substantially higher than \$Price; somewhat higher than \$Price; \$Price; somewhat lower than \$Price; substantially lower than \$Price]</p>
Simple	<p>Scenario recap: The new state law ...</p> <ul style="list-style-type: none"> allows more suburban homes on farmland and open space near cities causes your region's housing stock to grow by an additional 10% over the next five years <p>How would this affect the market value of typical \$Home_type in \$City? It would...</p> <p>[substantially increase their market value; somewhat increase their market value; have no effect on their market value; somewhat decrease their market value; substantially decrease their market value.]</p>
Potential Outcomes	<p>Scenario recap: The new state law ...</p> <ul style="list-style-type: none"> allows more suburban homes on farmland and open space near cities causes your region's housing stock to grow by an additional 10% over the next five years <p>If this scenario occurred, how much do you think the typical \$Home_type in \$City would sell for in five years? [\$_____]</p>
<i>Survey 3</i>	
Simple	<p>Scenario recap: The new law ...</p> <ul style="list-style-type: none"> removes local restrictions on housing development causes your region's housing stock to grow by an additional 10% over the next five years <p>How would this affect the market value of typical existing \$Home_type in \$City? It would...</p> <p>[substantially increase their market value; somewhat increase their market value; have no effect on their market value; somewhat decrease their market value; substantially decrease their market value.]</p>

Table 2: Levels and question wording for the vignette attribute, *Elicitation Format*.

Level	Question Text
Super-Simple	Imagine that \$State passes a law that removes local restrictions on housing development. It causes a large increase in the number of new houses and apartments in your metropolitan region. Would the market value of typical existing \$Home_type in \$City increase, decrease, or stay the same? [Their market value would increase; ... decrease; ... stay the same]

Notes. Highlighted text depends on the attribute level; other text is independent of the level (within a survey). Bold-font terms that begin with \$ are piped-text strings that depend on the respondent’s zip code or answers to previous survey questions. Note that on Survey 3, the “super-simple” elicitation format does not provide a vignette on the screen before the price-effect-elicitation question, so there is no recap in the elicitation question. The order of response options is randomized from high-to-low or low-to-high at the respondent level.

Survey 2 includes one additional randomized vignette attribute, a price-adjustment factor drawn from $\{-20\%, 0\%, 20\%, 40\%\}$. It is an incremental change applied to the Zillow counterfactual price in the Complex elicitation condition.³³ We designed this manipulation as a way of checking whether observed supply skepticism may reflect careless or disbelieving survey responses from people who think the embedded counterfactual price or rent is “obviously too low for a home in my town.” A respondent who has that reaction might answer that the home’s value will be higher if the supply shock occurs not because they think the shock will raise prices, but because they think prices will be higher regardless of the shock.

On Survey 2 and Survey 3, we follow up the price and rent prediction questions by asking, “How confident are you about the direction of the effect of this scenario on home values (rents), that is, whether it would generally increase, decrease, or have no effect on home values (rents)? [Not at all confident, not confident, somewhat confident, confident, or very confident].” By comparing the distribution of predictions between more-confident and less-confident respondents, we can test our conjecture that the supply skepticism observed on Survey 1 was due to random answers by confused respondents. (As noted in the main paper, Survey 3 also tests this conjecture using retest questions.)

A.4.2 Non-housing Supply Shocks (“Economic Knowledge”)

Table 3 provides the exact wording of the non-housing supply shock questions used on the three surveys.

Table 3: Economic knowledge questions.

Item	Question Text
Free Trade	A free trade agreement is a pact between two or more nations to reduce barriers to imports and exports among them. Do free trade agreements make the price of products sold in the U.S. higher, lower, or not make a difference? [Higher; Lower; Not make a difference]

³³The price adjustment is also employed in the Simple format in a follow-up question about the magnitude of predicted price and rent changes which is given to respondents in the Simple format. However, our preanalysis plan for this paper does not use that follow-up question because we suspect specific dollar-value answers will have a significant stochastic component.

Table 3: Economic knowledge questions.

Item	Question Text
Cars	If supply-chain problems cause automakers to produce fewer new cars, what happens to the price of used cars? [Used cars become more expensive; ... less expensive; The price of used cars doesn't change]
Labor	Imagine that a new high-school program for training students to be plumbers causes a large increase in the number of plumbers in a city. Would wages for other residential plumbers in the city increase, decrease, or stay the same? [Other plumbers' wages would increase; ... decrease; ... stay the same]
Grain	Imagine that a new, inexpensive fertilizer makes grain farms more productive. Farms treated with the fertilizer yield 50% more grain on average. Would widespread use of this fertilizer cause grain prices to increase, decrease, or stay the same? [Grain prices would increase; ... decrease; ... stay the same]

Notes. The items *Free Trade* and *Cars* were used on Survey 1. All four items were used on Surveys 2 and 3. Response options are denoted in square brackets; the ellipses stand in for text repeated from the preceding response option. The order of directional response options is randomized at the respondent level.

A.4.3 Housing Politics and Policy

Table 4 provides the exact wording of our questions about housing policy and politics and indicates which surveys used each question.

Table 4: Questions about housing politics and policy.

Item	Surveys	Question Text
Gentle Density	1	Proposal recap (zoning change for {your neighborhood only}{residential neighborhoods throughout \$Jurisdiction): <ul style="list-style-type: none"> allow new and renovated buildings to be one-and-a-half times as tall as nearby homes allow duplexes and triplexes in places where single-family homes are allowed Would you support or oppose \$Jurisdiction adopting this zoning change? [Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose]
Blame	2, 3	In your opinion, which of the following are responsible for high housing prices and rents in your area? (Choose up to three.) [Federal or state government; Local government; Investment banks; Foreign investors; Real-estate developers; Landlords; Homeowners; Environmental activists; Anti-development activists; Rich people moving to the area; Employers]

Table 4: Questions about housing politics and policy.

Item	Surveys	Question Text
Preemption Battery	2	<p>Next, we present four statements about whether states should override certain local restrictions on development in order to ensure that more housing may be built. Please indicate whether you agree or disagree with each statement. [Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree]</p> <ul style="list-style-type: none"> - “States should make local governments allow more suburban homes to be developed on farmland and open space near cities.” - “States should make local governments allow more single-family homes to be replaced with duplexes, triplexes, and fourplexes (2-4 unit buildings).” - “States should make local governments allow more apartment and condo buildings near rail and bus stops.” - {“States should make local governments allow more single-family homes to be replaced with larger single-family homes.”}{“States should let local governments enact any restrictions on housing development that local governments want to enact.”}
TOD	2, 3	<p>Thinking about the possibility of more housing development in your metropolitan region, do you support or oppose constructing more apartment and condo buildings near rail and bus stops?</p> <p>[Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose]</p>
Sprawl	2, 3	<p>Thinking about the possibility of more housing development in your metropolitan region, do you support or oppose constructing more suburban homes on farmland and open space near cities?</p> <p>[Strongly support; Somewhat support; Neither support nor oppose; Somewhat oppose; Strongly oppose]</p>
Land Banking	2	<p>{Market-rate}{For-profit} housing is built without financial support from the government and may be sold or rented to anyone at any price. Subsidized affordable housing is built with government financial support and may be sold or rented only to low- and moderate-income households at prices they can afford.</p> <p>Do you agree or disagree with this statement:</p> <p>“{Cities}{\$City} should prohibit new {Market-rate}{For-profit} housing in places where subsidized affordable housing could be built in the future.”</p> <p>[Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree]</p>

Notes. Bold-font terms that begin with \$ represent piped information from previous survey questions. Terms in curly braces are randomized with equal probability. Response options are in square brackets. The “Gentle Density” question on Survey 1 has a geographic-scale randomization (neighborhood, city, state); **\$Jurisdiction** is the name of the respondent’s city in the first two cases and the name of respondent’s state in the last case. On Survey 2, all respondents receive the first three statements in the preemption battery; there are two possibilities for the final statement. As indicated in Figure A.3, Survey 3 also includes an exploratory block of housing policy questions that are not used in this paper.

A.4.4 Potential Explanations

Table 5 provides the exact wording of survey questions used to investigate potential explanations for housing supply skepticism.

Table 5: Questions about potential explanations for housing supply skepticism.

Item	Surveys	Question Text
------	---------	---------------

Table 5: Questions about potential explanations for housing supply skepticism.

Item	Surveys	Question Text
Predict Mast (2021) Findings	1	<p>A University of Notre Dame economist recently examined the effect of new apartment and condo buildings on the availability of affordable homes in the same metropolitan area.</p> <p>He wanted to see whether the opening of a new, expensive building would free up affordable housing through “chains of moves.” The logic is that some people in the region will trade up to nicer homes in the new building. Their previous homes can then be occupied by other families. The families that move into those homes vacate other dwellings, and so forth.</p> <p>The economist collected the current and previous addresses of 50,000 residents of new buildings in neighborhoods with above-average household incomes. He then found the current residents of their previous homes, and where those people previously lived, and so on through six rounds of moves.</p> <p>For every 100 new apartments and condominiums, the economist estimated the number of residential units that become available to buy or rent in the same metro region’s relatively affordable neighborhoods over the next 5 years. (A unit becomes available when its former occupant trades up to another home.)</p> <p>We’d like your best guess at what he found.</p> <ul style="list-style-type: none"> - Within five years of the opening of a 100-unit apartment or condo building in a large city, how many homes do the resulting chains-of-moves make available to buy or rent in the metro region’s affordable neighborhoods? Use the slider to give us your best guess. [Slider from 0-100, labeled “Number of homes in affordable neighborhoods”] - Of these {piped answer} relatively affordable homes that may become available through chains of moves, how many would you guess are in the metro region’s low-income neighborhoods? [Slider from 0-100, labeled “Number of homes in low-income neighborhoods”]
Confidence	2, 3	<p><i>Asked after eliciting prediction of price effect of 10% regional supply shock.</i> How confident are you about the direction of the effect of this scenario on home values—that is, whether it would generally increase, decrease, or have no effect on home values?</p> <p>[Not at all confident; Not confident; Somewhat confident; Confident; Very confident]</p>
Zero-Sum Thinking Battery	2	<p><i>Four questions, each in the form, “Which statement is closer to your views?,” presenting the following pairs:</i></p> <ul style="list-style-type: none"> - [“The art of politics is finding compromises that are good for everyone”; “The art of politics is dominating the other side.”] - [“In life, when somebody gains, others usually have to lose”; “In life, when somebody gains, others usually benefit too.”] - [“When government policies help one group get ahead, other groups are usually held back”; “When government policies help one group get ahead, other groups usually benefit too.”] - [“If someone gets richer it means that someone else gets poorer”; “If someone gets richer it means they’re satisfying other people’s wants and needs.”]

Table 5: Questions about potential explanations for housing supply skepticism.

Item	Surveys	Question Text
Mental Models Battery I	2	<p><i>These statements are preceded by a recap of the respondent's 10% regional supply shock scenario. After the 5th statement, we pose a factual question about the nature of the supply shock and then recap the vignette again. For each statement, the response set is: [Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree]</i></p> <ul style="list-style-type: none"> - "This scenario would make it easier to find a home to buy or rent in the region's less-expensive neighborhoods." - "This scenario would make it easier to find a home to buy or rent in the region's more-expensive neighborhoods." - "This scenario would result in more companies opening or expanding offices in the region." - "This scenario would result in more demolition of currently-affordable homes in the region." - "This scenario would result in more corporations buying up housing in the region." - "This scenario would reduce the overall quality of life in my neighborhood." - "This scenario would result in more high-income people moving into lower-income neighborhoods." - "This scenario would increase the amount of expensive new housing built next door to older, more affordable homes." - "This scenario would result in more new housing being built for people like me."
Mental Models Battery II	2	<p>Next, we present several alternative statements about how certain land use changes may affect home prices or rents, other things equal. Please choose the statement that's closest to your views.</p> <ul style="list-style-type: none"> - "When more companies open or expand offices in a region, this generally results in... [higher / lower / no change in] home prices and rents in the region." - "When there's more demolition of affordable homes, this generally results in... [higher / lower / no change in] rents for other affordable homes." - "When corporations buy up more of the housing in a region, this generally results in... [higher / lower / no change in] in rents." - "When the overall quality of life in a neighborhood declines, this generally results in... [higher / lower / no change in] home prices and rents in the neighborhood." - "When more high-income people move into a lower-income neighborhood, this generally results in... [higher / lower / no change in] home prices and rents in the neighborhood." - "When expensive new housing is built next door to older, more affordable homes, this generally... [decreases / increases / has no effect on] the market value of the older homes." - "When there's more construction of new housing for people like me, this generally results in... [higher / lower / no change in] home prices and rents for people like me." - "When more homes become available to buy or rent in a region's more-expensive neighborhoods, this generally results in... [higher / lower / no change in] home prices and rents in the region's less-expensive neighborhoods." - "When more homes become available to buy or rent in a region's less-expensive neighborhoods, this generally results in... [higher / lower / no change in] home prices and rents in the same less-expensive neighborhoods."
Observed Development	2	<p>Do you agree or disagree with this statement: "Most of the new housing in my area has been built in neighborhoods where home prices and rents are going up." [Strongly agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Strongly disagree]</p>

Table 5: Questions about potential explanations for housing supply skepticism.

Item	Surveys	Question Text
Subjective Numeracy Battery	3	<ul style="list-style-type: none"> - How good are you at working with fractions? [Not at all good; Hardly good; Somewhat good; Very good; Extremely good] - How good are you at working with percentages? [Not at all good; Hardly good; Somewhat good; Very good; Extremely good] - How good are you at calculating a 15% tip? [Not at all good; Hardly good; Somewhat good; Very good; Extremely good] - When reading a news story, how helpful do you find tables and graphs that are part of the story? [Not at all helpful; Hardly helpful; Somewhat helpful; Very helpful; Extremely helpful] - When people tell you the chance of something happening, do you prefer that they use words (“it rarely happens”) or numbers (“there is a 1% chance”)? [Always prefer words; Usually prefer words; Sometimes prefer words; Sometimes prefer numbers; Usually prefer numbers; Always prefer numbers] - When you hear a weather forecast, do you prefer predictions using percentages (“there will be a 20% chance of rain today”) or predictions using only words (“there is a small chance of rain today”)? [Always prefer percentages; Usually prefer percentages; Sometimes prefer percentages; Sometimes prefer words; Usually prefer words; Always prefer words] - How often do you find numerical information to be useful? [Never; Rarely; Sometimes; Often; Always]
Local Price Effects of “Luxury” Housing	3	Consider a neighborhood of older, relatively affordable homes in an expensive city. If the city allowed more luxury housing to be built in the neighborhood, rents for older housing in the same neighborhood would. . . [increase; decrease; stay the same.]
Development: Cause or Consequence	3	Which of the following statements is closer to the truth? [Developers don’t make places more expensive when they build new housing; they just pick more expensive places to build in. Developers make places more expensive when they build new housing. I have no opinion.]

Notes. Terms in curly braces are randomized. Bold-font terms that begin with \$ convey piped information from previous survey questions. Response options are in square brackets.

A.4.5 Within-survey test-retest questions

As noted, Survey 3 respondents were randomly assigned to be retested on a supply-shock question near the end of the survey. To reduce monotony and discourage recall-based responding, we made slight changes to question wording between the “test” and “retest” version of each question, as shown in Table 6.

Table 6: Test-retest questions on Survey 3.

Item	Test Wording	Retest Wording
Price Effects of 10% Regional Shock	Imagine that \$State passes a law that removes local restrictions on housing development . It causes a large increase in the number of new houses and apartments in your metropolitan region. Would rents for typical existing \$Home_type in \$City increase, decrease, or stay the same?	Imagine that a new manufacturing process increases the productivity of homebuilders . It causes a large increase in the number of new houses and apartments in your metropolitan region. Would rents for typical existing \$Home_type in \$City increase, decrease, or stay the same?

Table 6: Test-retest questions on Survey 3.

Item	Test Wording	Retest Wording
Local Price Effects of “Luxury” Housing	Consider a neighborhood of older, relatively affordable homes in an expensive city . If the city allowed more luxury housing to be built in the neighborhood , rents for older housing in the same neighborhood would. . .	Consider a city where housing is generally expensive, but poorer neighborhoods have relatively affordable homes . If the city removed restrictions on building high-priced condos in one of the poorer neighborhoods , rents for existing housing in the same neighborhood would. . .
Free Trade	A free trade agreement is a pact between two or more nations to reduce barriers to imports and exports among them. Do free trade agreements make the price of products sold in the U.S. higher, lower, or not make a difference?	A tariff-reduction agreement is a pact between two or more nations to reduce barriers to imports and exports among them. Do tariff-reduction agreements make the price of products sold in the U.S. higher, lower or not make a difference?
Cars	If supply-chain problems cause automakers to produce fewer new cars , what happens to the price of used cars ?	If labor shortages cause automakers to produce fewer new trucks , what happens to the price of used trucks ?
Labor	Imagine that a new high-school program for training students to be plumbers causes a large increase in the number of plumbers in a city. Would wages for other residential plumbers in the city increase, decrease, or stay the same?	Imagine that a new high-school program for training students to be auto mechanics causes a large increase in the number of auto mechanics in a city. Would wages for other auto mechanics in the city increase, decrease, or stay the same?
Grain	Imagine that a new, inexpensive fertilizer makes grain farms more productive. Farms treated with the fertilizer yield 50% more grain on average. Would widespread use of this fertilizer cause grain prices to increase, decrease, or stay the same?	Imagine that a new, inexpensive greenhouse design makes vegetable farms more productive. Farms using the new greenhouses yield 50% more vegetables on average. Would widespread use of the new greenhouses cause vegetable prices to increase, decrease, or stay the same?

Notes. The aspects of a question that vary between the test and the retest are highlighted in this table, but not on the survey. For the question about a 10% regional housing supply shock, we randomize whether the respondent is assigned to the technology shock or the state-preemption shock in the initial vignette and we present the other version of the shock as the retest question.

Appendix B Additional Results on Test-Retest Consistency (Survey 3)

In our preanalysis plan for Survey 3, we speculated that respondents who are supply-skeptical about the effect of a large, positive regional housing supply shock on rents are more likely to be guessers on economic-knowledge questions generally (compared to respondents who predict that a regional increase in housing supply would lower rents). We said we would provide a “low-powered test” of this conjecture by plotting retest consistency after subsetting the data by skepticism on the regional-shock question (rents). Figure B.1 provides these results.

Though the differences on individual items are imprecisely estimated, the overall picture is clear: people who predicted that a large, positive regional housing-supply shock would lower rents tend to retest more consistently on any question about economic knowledge than people who predicted that the regional housing shock would raise rents. This corroborates our thesis that housing supply skepticism is in substantial part a manifestation of guesswork-style responding, rather than well-formed beliefs. But note that even the strong skeptics retest within the survey

nearly twice as consistently on the housing question (when the retest is in the same question format) as would be expected if they were drawing answers from the uniform distribution.

Within-Survey Test-Retest Consistency on Supply-Shock Questions, by Prediction of Effect of Regional Shock on Rents

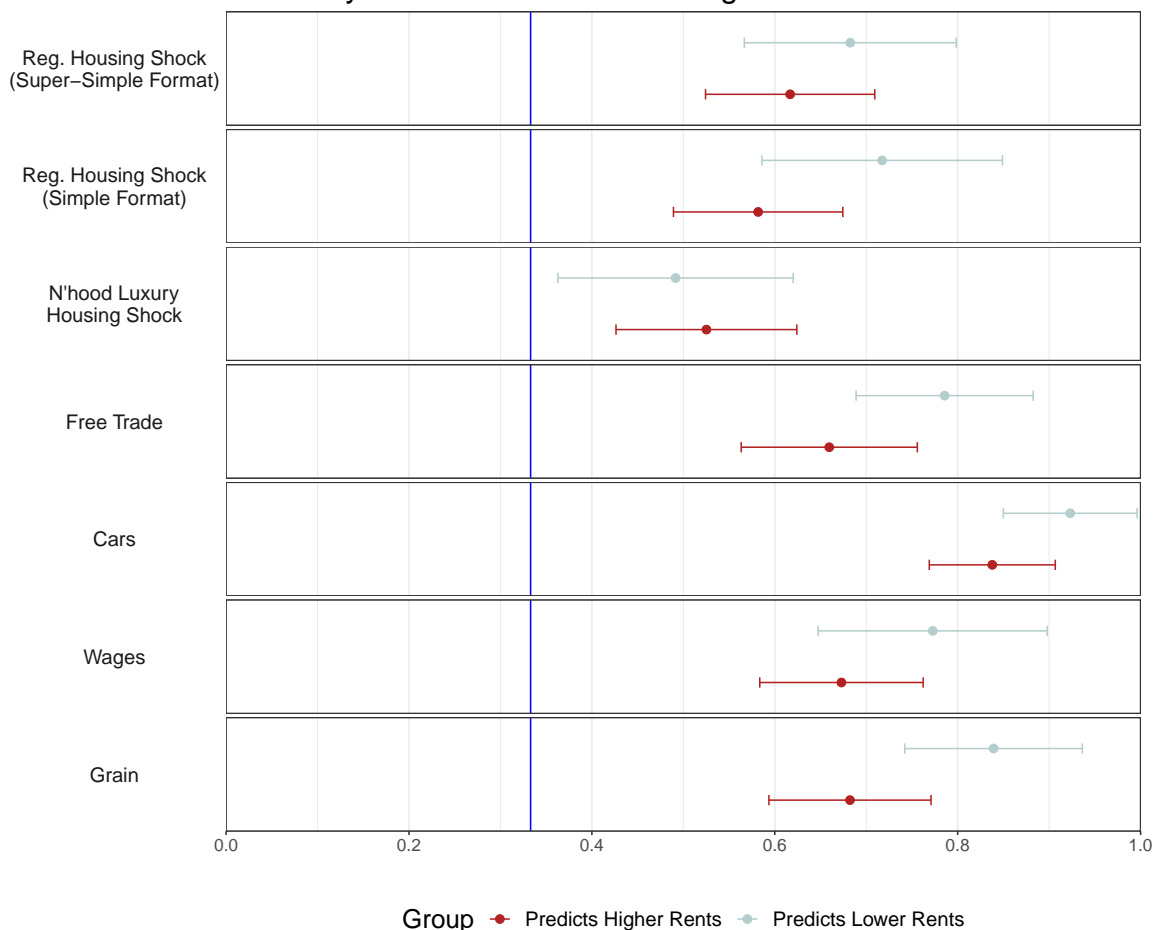


Figure B.1: Test-retest consistency on housing and non-housing supply shock questions, subset by whether the respondent predicted higher rents (strong supply skepticism) or lower rents (supply optimism) from a 10% regional housing supply shock. The vertical blue line depicts the rate of test-retest consistency that would be observed if survey responses were drawn from the uniform distribution.

To summarize succinctly the average difference in test-retest consistency among respondents who gave “supply optimist” vs. “strongly skeptical” answers to the question about how a regional housing shock would affect rents, we ran an off-plan regression that pools all of the housing and non-housing supply questions. The average retest consistency rate is 9 pp higher among supply optimists than supply skeptics, a difference which is highly significant $p = 0.003$.

Table 7: Average Difference in Test-Retest Consistency Between Respondents Who Did / Didn’t Answer Regional Shock Question Correctly (Survey 3)

Variable	Coefficient	95% CI	p-value
(Intercept)	0.66	0.62, 0.69	<0.001
Group			
Predicts Higher Rents	—	—	
Predicts Lower Rents	0.09	0.03, 0.14	0.003

Note: This table reports an off-plan test for the significance of the average difference in within-survey test-retest consistency between respondents who provided supply optimist vs. strongly skeptical responses to the question about the effect of a 10% regional supply shock on rents, summarizing the information which is depicted graphically in Figure B.1. The model is a robust linear regression of (1) an indicator for test-retest consistency on an economic knowledge question on (2) an indicator (“Group”) for whether the respondent predicted higher or lower rents from the regional housing shock, aggregating across all economic knowledge questions and clustering standard errors on the respondent. Respondents who predicted no change in rents are dropped, for consistency with Figure B.1.

Appendix C Design-Based Robustness Check on Housing Supply Skepticism (Surveys 2 & 3)

This section reports the results of our design-based robustness checks on respondents’ perceptions of the directional effect of a 10% regional supply shock on home prices and rents.

Recall that on Survey 2, we replaced the regional supply-shock question used on Survey 1 with a conjoint-style question, varying the *cause* of the shock (technological change, or one of several forms of state preemption of local land-use restrictions); the *elicitation format* of the survey question; and, for those elicitation formats that require it, *posited future home prices and rents* in the respondent’s area absent the shock. On Survey 3, we also used a conjoint-style supply-shock question, varying the cause of the shock (tech change vs. preemptive state deregulation) and the elicitation format (“simple” vs.“super-simple”). See Appendix A.4 for question-wording details.

Figures C.1 and C.2 report the results of these robustness checks, for Surveys 2 and 3, respectively. We categorize respondents as at least weakly supply skeptical if they don’t predict that the large, positive regional supply shock will lead to lower home prices (rents). Across all conditions except the “potential outcomes” elicitation format, at least 60% of respondents are weakly supply skeptical. Unsurprisingly, the potential-outcomes format—which requires respondents to enter in dollar terms their prediction of home prices (rents) in five years, and later similarly elicits a expectations under the shock—leads to fewer “no change” predictions. But even in this format, almost as many respondents predict that the shock will lead to higher prices (about 35%) as predict that it will lead to lower prices (about 45%).

There is also weak evidence (Figure C.1, third row of plots) that positing a high counterfactual future price (absent the shock) leads a higher share of respondents to “predict” that future home prices will be lower than the stated counterfactual. We think this probably reflects disbelief in the

stated counterfactual.

On Survey 3, we again observe no effect of the cause of the shock on elicited rent and price predictions. The “super-simple” elicitation format may *slightly* reduce skeptical home-price predictions relative to the “simple” format, but the difference is small (about 5 pp) and not observed with respect to rent-predictions. We think it’s probably just chance variation. Certainly the super-simple format—which, again, is the same format used in our non-housing supply shock questions—does not reduce the rate of observed housing-supply skepticism (about 60%-70%) to the levels observed for other goods and services (50% or less). Compare Figure C.1 with Figure 4.3 in the main paper.

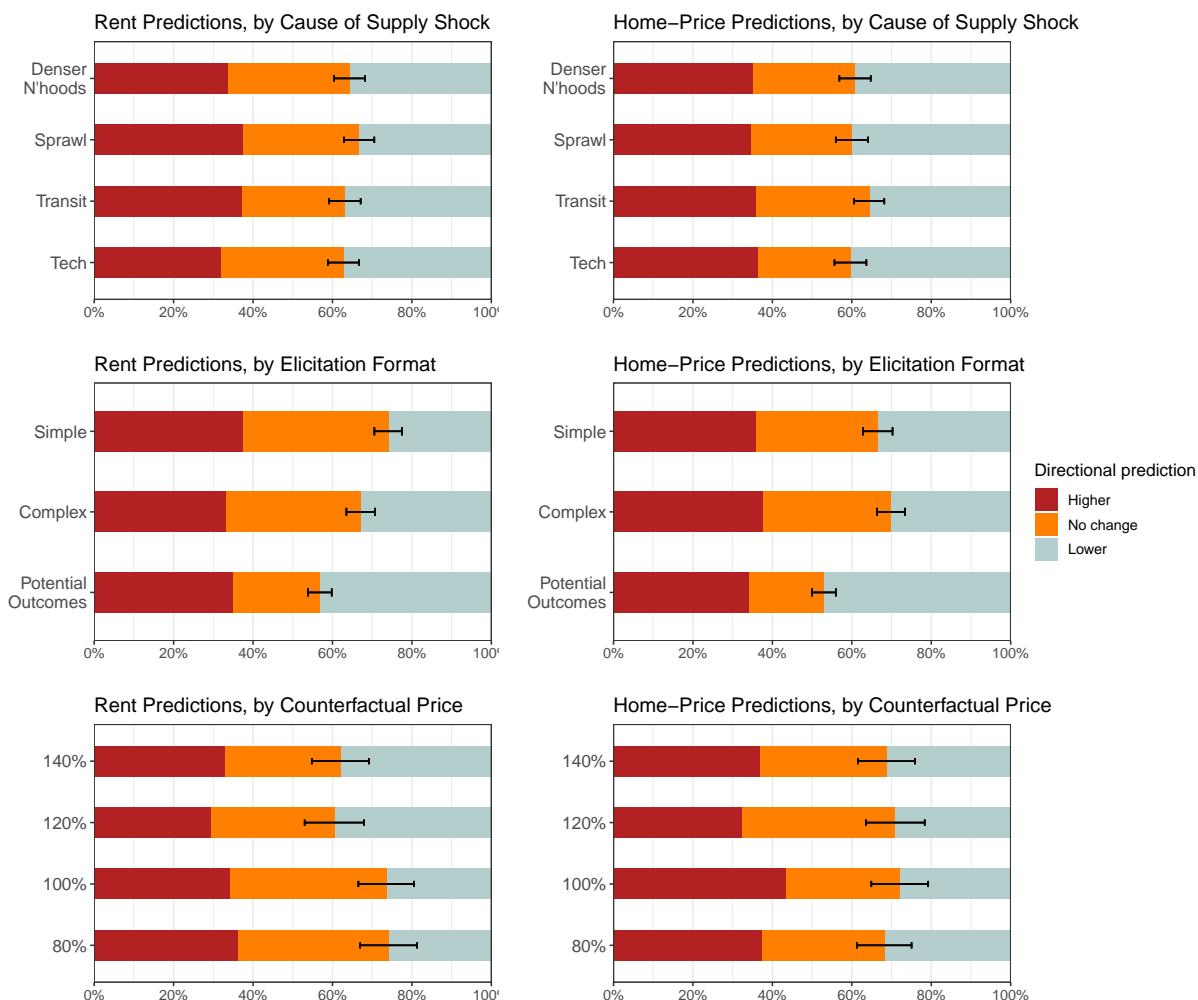


Figure C.1: Design-based robustness checks: Survey 2. This figure depicts marginal means of directional price and rent predictions associated with each level of the attributes *Cause of Supply Shock*, *Elicitation Format*, and *Counterfactual Future Price*. Errors bars are 95% confidence intervals on the proportion of the population that expresses strong or weak supply skepticism in the treatment condition. Counterfactual prices are presented to respondents only in the Complex elicitation format, so for plots in the third row of this figure, we restrict the sample to respondents who received that question format.).

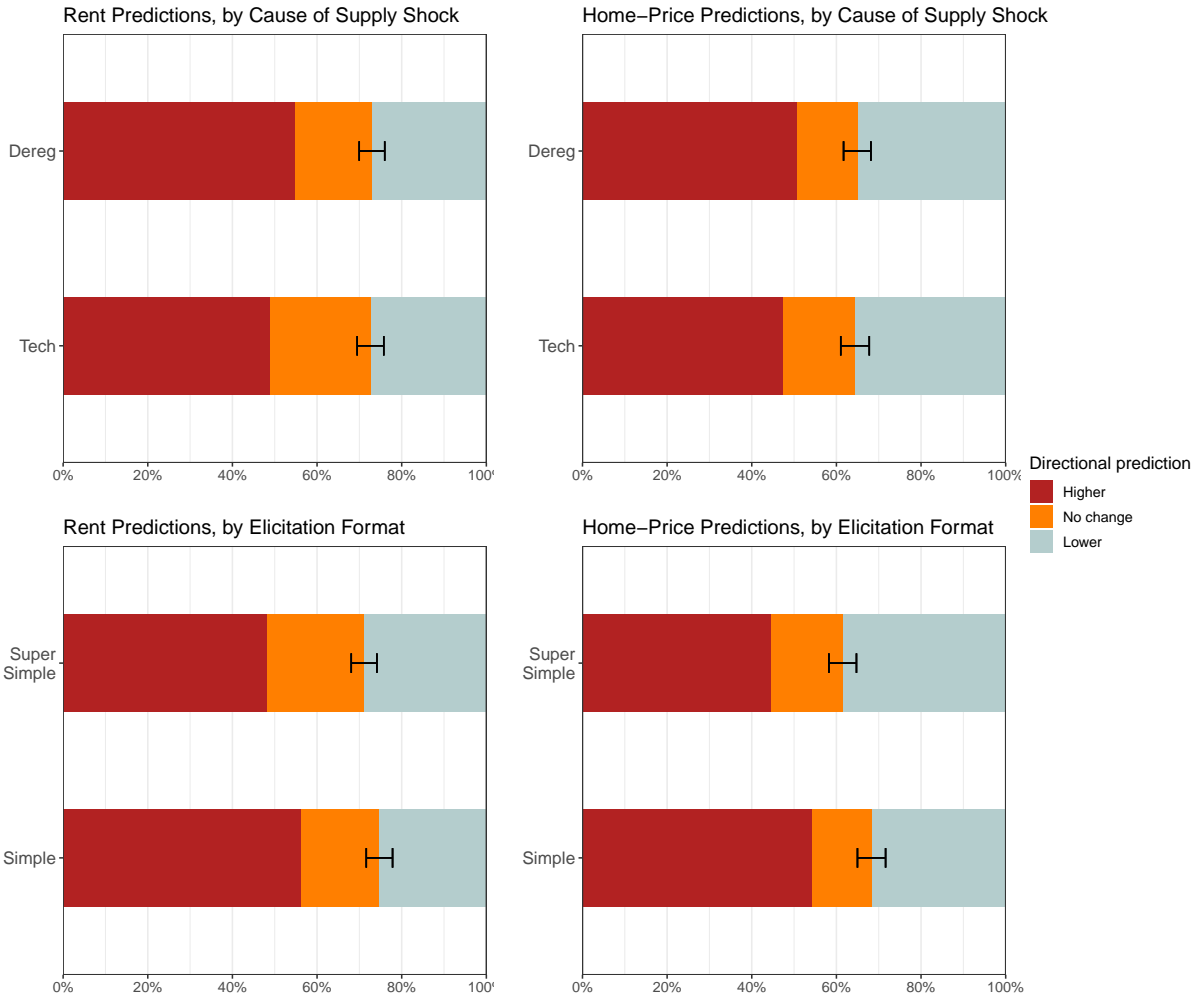


Figure C.2: Design-based robustness checks: Survey 3. This figure depicts marginal means of directional price and rent predictions associated with each level of the attributes *Cause of Supply Shock* and *Elicitation Format*. Errors bars are 95% confidence intervals on the proportion of the population that expresses strong or weak Supply Skepticism under each attribute-level treatment.

Appendix D Self-Reported Uncertainty About Price and Rent Predictions (Surveys 2 & 3)

On Surveys 2 and 3, we investigated whether respondents would self-report that their predictions of the price and rent effects of a 10% regional supply shock are guesswork. We did this in two ways. First, on both surveys, we posed a follow up question asking respondents how confident they were that the shock would have the directional effect on prices (rents) that they predicted. Second, on Survey 3, we randomly assigning some respondents to a version of the survey that included “don’t know” as a response option on the housing and non-housing supply-shock questions. We hypothesized that don’t-know responses would be more common on the housing questions.

D.1 Self-Reported Confidence

Figure D.1 plots the distribution of responses to the confidence question, by elicitation format. The main takeaways are (1) that the proportion of respondents who report being “confident” or “very confident” is fairly low (roughly 25%-40%), though higher than than the proportion who report being “not confident” or “not at all confident” (roughly 15%-25%); and (2) that simpler elicitation formats do not induce greater confidence in reported predictions. In other words, whatever confusion or uncertainty respondents may feel does not appear to be an artifact of the manner in which we elicited price and rent predictions. It more likely manifests genuine uncertainty about how a large positive shock to regional housing supply would affect home prices and rents.

Figure D.2 plots the distribution of directional price and rent predictions, by self-reported confidence. On Survey 2, confident respondents are not more likely to be supply skeptics than non-confident respondents. However, on Survey 3, the more confident respondents are substantially and significantly more supply skeptical. Only about 40% of the less-confident Survey 3 respondents predicted that a positive 10% regional shock would cause home prices or rents to rise, whereas 60% - 70% of the confident respondents made the strongly supply skeptical prediction. This may reflect the salience of inflation generally, or home-price inflation specifically, during the time of the fielding of Survey 3 (May of 2023).

D.2 Adding a “Don’t Know” Response Options

Our hypothesis that “don’t know” responses would be more common on housing than non-housing questions is not borne out.

Figure D.3 shows the distribution of responses to all price-prediction questions among respondents who received (left panel) or did not receive (right panel) the don’t-know option (Survey 3). For most questions, about 10% of respondents chose the don’t-know options. The don’t-know rate may be marginally higher on the labor-markets question (about 13 pp, and it’s substantively and significantly higher on the free-trade question (about 23 pp). The “super-simple” elicitation format does not attenuate the don’t-know rate or supply-skepticism. (See also Figure C.2.)

We also preregistered a test of the hypothesis that the don’t-know rate would be higher for each rent-effect prediction question on Survey 3 than for the average of the labor, cars, and grain questions. For purposes of this hypothesis test, we excluded the trade question, because we thought answer might reflect partisan identities more than economic knowledge, and we focused on rent rather than home-price predictions because the effect of land-use liberalization on home prices is more ambiguous in theory than its effect on rents (home prices reflect the value of the parcel of land

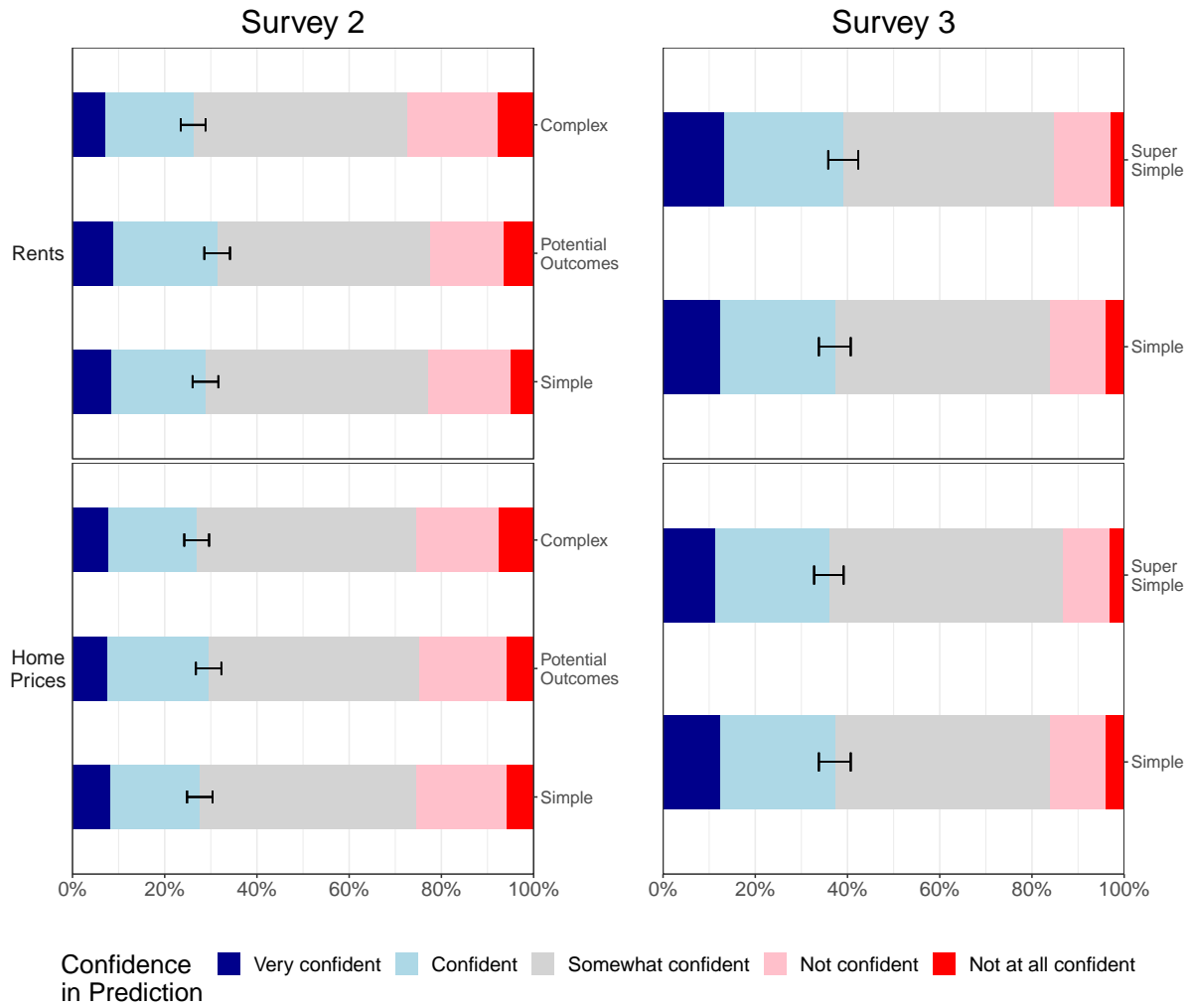


Figure D.1: Self-reported confidence in predicted price and rent effects of 10% regional housing supply shock, by elicitation format. Errors bars are 95% confidence intervals on the proportion of the population that is “very confident” or “confident.”

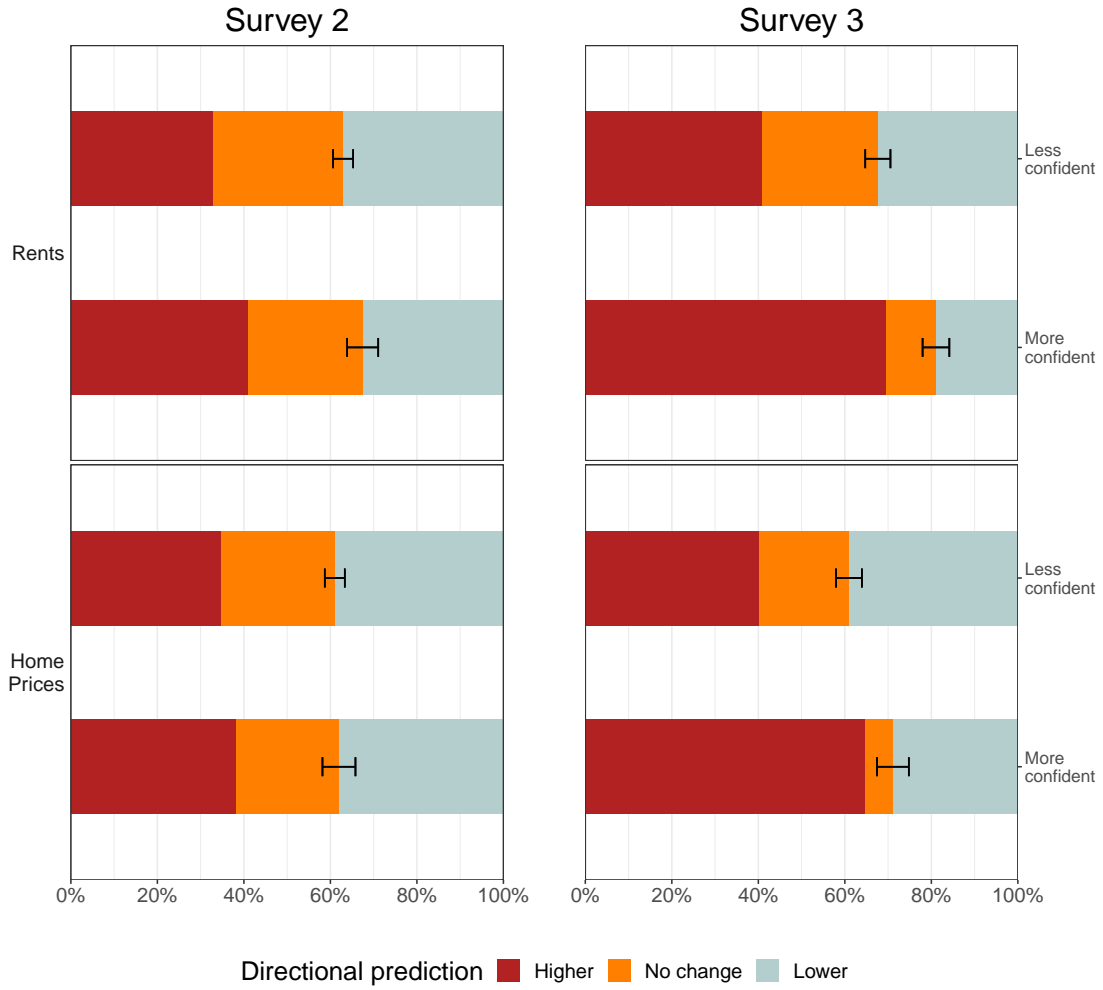


Figure D.2: Elicited directional predictions of home-price and rent effects of 10% regional housing supply shock, by self-reported confidence in direction of prediction. “More confident” respondents are above median, which in this case is equivalent to answering “very confident” or “confident” on the confidence question. “Less confident” respondents are everyone else. Errors bars are 95% confidence intervals on the proportion of the population that is at least weakly supply skeptical.

on which the home sits as well as the value of physical improvements, and land-use liberalization may increase the value of some parcels).

Table 8 reports the results of this test. In keeping with the graphical results in Figure D.3, we see that the baseline don't-know rate for the non-housing questions is about 0.10, that the don't-know rate on the regional-shock housing question is virtually identical, and that the don't-know rate on the neighborhood-shock housing question is slightly but not statistically significantly lower.



Figure D.3: Effect of “don't know” response option. Survey 3. The left plot shows the distribution of responses among respondents who were randomly assigned to questions with don't-know in the choice set. The right plot shows the distribution of responses among respondents who did not receive a don't-know option. Strong skeptics are those who predict that a positive (negative) supply shock leads to higher (lower) prices. Weak skeptics are those who predict no change. Not-skeptics are those who predict that a positive (negative) shock leads to lower (higher) prices.

Table 8: Difference in Don’t-Know Rates on Rent-Prediction Questions Relative to Baseline of Non-Housing Supply-Shock Questions (Survey 3)

Item	Estimate	95% CI	p-value	Romano-Wolf p-value
(Intercept)	0.11	0.09, 0.13	<0.001	
Regional Supply Shock (rents)	0.00	-0.04, 0.04	>0.9	>0.9
N’hood Luxury Dev. (rents)	-0.03	-0.06, 0.00	0.056	0.14

Note: This table reports our preregistered test for the significance of the difference (if any) between don’t-know response rates on housing vs. non-housing questions included on Survey 3. We subsetted to observations on the neighborhood housing shock (rents), regional housing shock (rents), cars, labor market, and grain questions, and then regressed an indicator for a don’t-know response on indicators for whether the respondent was answering the neighborhood-housing-supply-shock or the regional-housing-supply-shock question. The reference condition (intercept) captures the average don’t-know rate on the labor market, commodity market, and automobile market questions.

Appendix E Causal Mental Models of Housing Markets (Survey 2)

In this appendix, we present the design and results of our two-stage mental models from Survey 2. We then model levels of Supply Skepticism as a function of responses on the two-part mental model questions. The main takeaway is that answers to the mental-model questions explain very little of the variation in directional predictions of the price and rent effect of a 10% regional supply shock. However, we do observe a substantial consensus of opinion about the *local* effects of new development and in-migration on prices of housing in the vicinity.

E.1 Design

To deepen understanding of price predictions, Survey 2 asks respondents how the 10% regional supply shock would affect certain material outcomes in their neighborhood, city, or region. Later in the survey, we ask how such material changes generally affect prices or rents, other things equal. We could attempt to elicit these mental models directly by asking people why they gave the price predictions they did (Andre et al., 2021). However, it is common knowledge that survey respondents do not accurately self-report the reasons for their beliefs and actions. We partition the questions about mental models into two sections, so that respondents’ answers about material effects (“stage one”) are at least one step removed from their stated beliefs about the translation of material effects into prices (“stage two”). See Table 9. Our mental-model questions were written to convey certain tenets of elite Supply Skepticism summarized in Been, Ellen and O’Regan (2019), e.g., the segmented-markets thesis), and also to capture concerns that were expressed in the free-text responses on our pilot survey (Survey 1), e.g., fear of corporate ownership. Question order is randomized within each mental-model block.

In the middle of the first block of mental-model questions, respondents are quizzed about the source of the supply shock in their vignette. The supply-shock scenario is then recapped for all respondents.³⁴

³⁴Even if respondents answered the scenario recall question incorrectly, they remained in the sample, on the assumption that our reminder would be sufficient. Since the order of the price-effect questions is randomized, there is no design-induced correlation between substance of the price-effect question and care in responding.

Table 9: Mental-Model Questions

Material Outcome	Price-Related Outcome	Concept tested	Notes
1A. This scenario would make more homes available to buy or rent in the region's more-expensive neighborhoods.	1B. When more homes become available to buy or rent in a region's more-expensive neighborhoods, this generally results in [higher/lower] home prices and rents in less-expensive neighborhoods.	Chain of moves and filtering (together with 2)	We expect Supply Skeptics to reject Proposition 2A (but not 1A) and Proposition 2B (but not 1B). This would be consistent with the view that supply-and-demand forces operate within but not between market segments. By contrast, recent research finds that new housing in expensive neighborhoods frees up housing in less affluent neighborhoods, facilitating "chains of moves" (Mast, 2021; Hansena and Rambaldib, 2022).
2A. ... would make more homes available to buy or rent in the region's less-expensive neighborhoods	2B. When more homes become available to buy or rent in a region's less-expensive neighborhoods, this generally results in [higher/lower] home prices and rents in the same less-expensive neighborhoods.	Chain of moves and filtering (together with 1)	
3A. ... would result in more companies opening or expanding offices in the region.	3B. When more companies open or expand offices in a region, this generally results in ... [higher/lower] home prices and rents.	Agglomeration	We expect Supply Skeptics and optimists alike to agree with these propositions, though skeptics may be more likely to believe that new housing will attract in-migration of firms and workers.
4A. ... would result in more demolition of currently-affordable homes in the region.	4B. When there's more demolition of affordable homes in a region, this generally results in ... [higher/lower] rents for other affordable homes in the region.	Segmented markets / direct effect	These items capture a mechanism that we expect to manifest only in the supply-shock scenarios that focus on redevelopment (TOD and plex). Expectations about the 'direct effect' of a scenario on existing affordable homes will be more salient in laypeople's thinking about prices than the indirect effect of a larger housing stock on prices across all market segments.
5A ... would result in more corporations buying up housing in the region.	5B. When corporations buy up more of the housing in a region, this generally results in ... [higher/lower] rents.	Scapegoating	We expect people who are high in zero-sum thinking will expect pro-housing state policy interventions to generate more corporate ownership of housing, and more corporate ownership to translate into higher rents.
6A. ... would reduce the overall quality of life in my neighborhood.	6B. When the overall quality of life in a neighborhood declines, this generally results in [higher/lower] home prices and rents in the neighborhood.	Neighborhood disamenities (aggregate)	We expect that almost all respondents will agree with 6B, since Supply Skeptics may still hold standard views of the demand side of the housing market. Answers to 6A will reveal whether people expect the different scenarios, which vary with respect to the geographic distribution of new housing (greenfields, transit corridors, existing residential neighborhoods), to have different impacts on neighborhood amenities.

Table 9: Mental-Model Questions

Material Outcome	Price-Related Outcome	Concept tested	Notes
7A. ... would result in more high-income people moving into lower-income neighborhoods.	7B. When more high-income people move into a lower-income neighborhood, this generally results in ... [higher/lower] prices and rents for other homes in the neighborhood.	Gentrification (people)	This gentrification story is standard in big-city politics. We expect that gentrification impacts (7A) will be highly correlated with price predictions among urban renters, consistent with a myopic focus on local rather than market-wide effects. We expect nearly all respondents to agree with Proposition 7B.
8A. ... would result in more expensive new housing being built next door to older, relatively affordable homes.	8B. When expensive new housing is built next door to older, relatively affordable homes, this generally ... [increases/decreases] the market value of the older homes.	Gentrification (building)	We expect nearly all respondents to agree with 8B. Agreement with 8A is likely to vary across scenarios (most in TOD, least in sprawl)
9A. ... would result in more new homes being built for people like me.	9B. When more new homes are built for people like me, this generally results in ... [higher/lower] prices and rents for people like me.	Segmented markets / personal story	These questions pertain to possible identitarian / zero-sum thinking about housing policy.

E.2 Findings

E.2.1 Answers to Two-Stage Mental Models Questions

The stacked bar graphs in Figure E.1 show the distribution of responses to our material-effect questions and, in the second column, beliefs about whether this material effect tends to cause higher, lower, or no change in prices.³⁵ Responses to the material-effect questions are disaggregated by cause of the supply shock, in recognition of the fact that the different scenarios may impact existing neighborhoods quite differently.

The main inference from Figure E.1 is the existence of a substantial consensus about all of the price-effect questions *except for questions about how a positive quantity change within a regional market affects prices in the same market*. Respondents overwhelmingly agreed about how, other things being equal, local amenity effects translate into prices (quality of life, effect of new expensive homes on value of older home next door); about how demand-side shocks translate into prices (expansion of businesses, rich in-movers); and even about how a negative shock to the stock of one type of home affects prices for other homes of that type (demolition of affordable homes). Respondents were also of one mind that corporate ownership increases rents.

Where disagreement at stage 2 exists, it is mostly about the effect of increases in supply on prices: whether new housing in expensive places reduces the price of housing in relatively affordable neighborhoods elsewhere in the region; whether new housing in less-expensive places tends to reduce the price of housing in the same less-expensive neighborhoods; and even whether “more new housing for people like me” tends to to reduce the price of housing for people like me.

There appears to be some support for the view that housing markets are “segmented,” in that the proportion of respondents who expect new supply in less-expensive neighborhoods to reduce

³⁵In our preanalysis plan, we stated that we would report results disaggregated by zero-sum thinking. That figure is hard to read and the differences by zero-sum thinking are very modest, so we’ve relegated it to the SI.

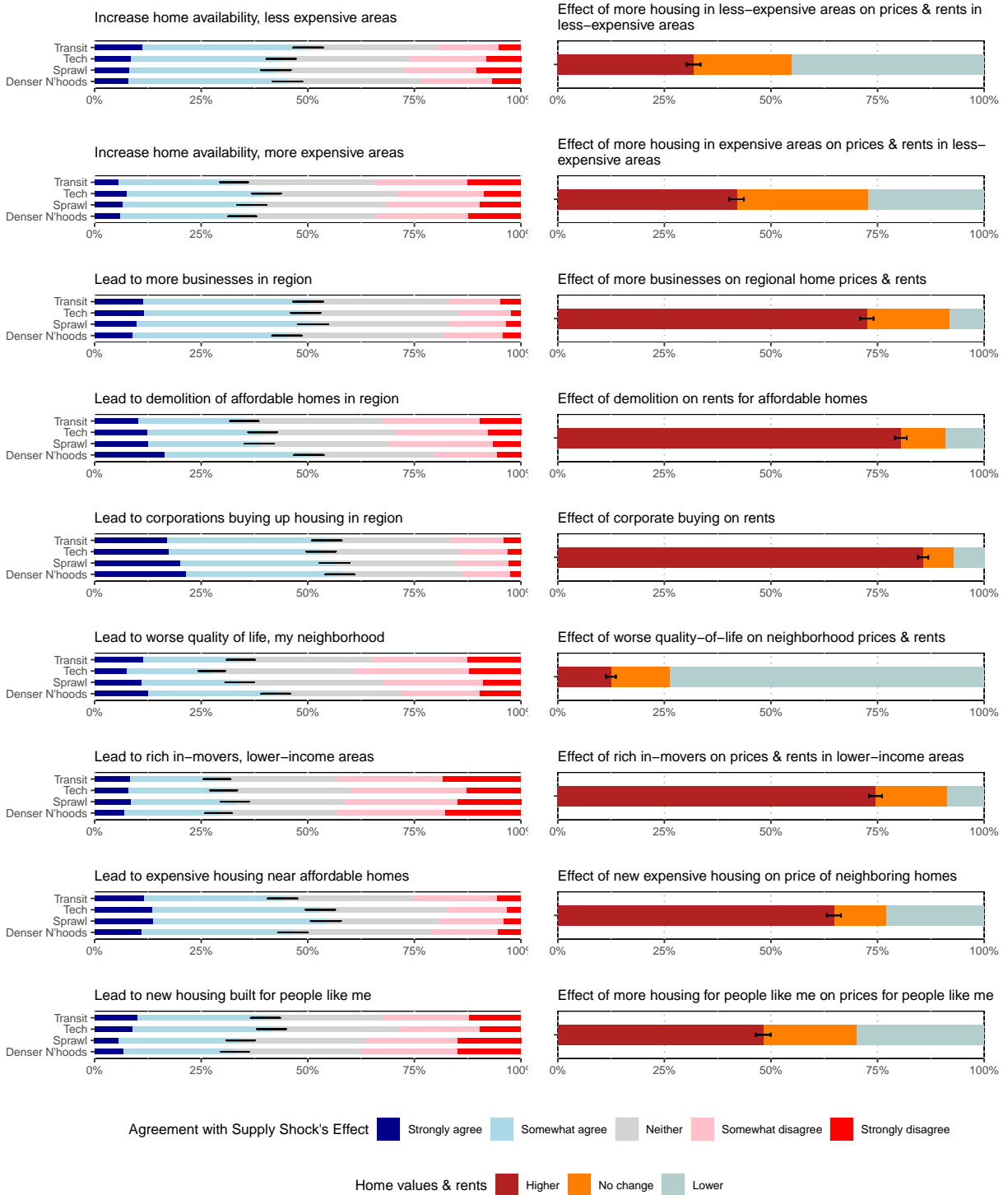


Figure E.1: Mental models of material effects of 10% supply shock (“stage 1”) and their translation into prices (“stage 2”). Left column: Agreement with stage-1 statements about the material effects of assigned supply-shock scenario (technology, transit, sprawl, or neighborhood density). Right column: Reported beliefs about stage-1 material effect role in housing prices. Each “row” in the figure depicts a related question pair. Error bars are 95% confidence intervals on the proportion who strongly/somewhat agree (first column) or who think the material effect would increase home values or rents (second column).

prices in those neighborhoods (about 40%-50%) is about twice as large as the proportion who expect new supply in more-expensive neighborhoods to reduce prices in less expensive neighborhoods (about 25%). Put differently, however, this result shows that half of respondents are at least weakly skeptical about the effect of new supply *within* less-expensive neighborhoods. ³⁶

The material-effect (“stage 1”) predictions do not vary greatly with the cause of the shock, for the most part. As we anticipated (see Table 9), however, the neighborhood-density upzoning was predicted to result in more demolition of affordable homes than the sprawl and homebuilding-technology scenarios. But contrary to our expectations and commonplace narratives about urban gentrification, the proportion of respondents who predicted an increase in demolition of affordable homes was no higher in the transit-oriented upzoning condition than in the technology and sprawl conditions. And the proportion who expect more “expensive new housing next door to affordable homes” is actually about 5-10 points *lower* in the transit and neighborhood-density scenarios than in the sprawl and technology scenarios. This runs contrary to the standard gentrification narrative.

As for quality of life, we observe substantial, statistically significant differences across conditions in the proportion of respondents who predict that the supply shock would adversely affect their own neighborhood. The neighborhood-density scenario elicited the most concern on this front, whereas respondents were least concerned about the homebuilding-technology scenario, perhaps because it is so abstract.

The most surprising stage-1 result is that across all scenarios, respondents were somewhat more likely to expect homes to become available to buy or rent in less-expensive neighborhoods than in more-expensive neighborhoods. The difference is most pronounced in the transit scenario. We would expect developers in all scenarios to target higher-priced neighborhoods, and that homes would become available in less-expensive neighborhoods, at somewhat lower rates, via chains-of-moves induced by new construction in expensive places (Mast, 2021; Hansena and Rambaldib, 2022). Perhaps many respondents figured that the residents of a region’s more expensive neighborhoods would find a way to prevent development nearby, even if that means subverting a preemptive state law.³⁷ Or perhaps they interpreted the question egocentrically, reading “more homes available” to mean “more homes available *and affordable to people like me.*”

E.2.2 Correlations of Mental Model Answers and Elicited Predictions of Effect of 10% Supply Shock

The first panel of Figure E.2 shows bivariate correlations among predicted material effects, and between predicted material effects and the ultimate effect on home prices and rents of the 10% regional shock scenario. The correlations between material and price predictions are modest but nearly all in the direction one would expect, given the answers to the stage-2 mental model questions. The one anomaly is that a prediction of “more housing for people like me” is negatively correlated with price/rent predictions, which is the standard-economics answer but not the typical answer to the stage-2 question about the effect of more housing for people like me on prices.

One way of reading these results is that respondents project good things onto supply-shock scenarios they happen to like, and bad things onto scenarios they dislike. For example, “more homes for people like me” is associated with the belief that the additional housing stock will lead to better

³⁶Perhaps this reflects an expectation about local amenity effects from new construction near relatively affordable older homes (see column 2, plots 7 and 8).

³⁷On the other hand, respondents report by overwhelming margins that in their own area, new construction occurs in places where prices and rents are going up. See section ??.

quality of life, less demolition of affordable homes, less corporate ownership, and lower rents. By contrast, believing that a supply shock would lead to more corporate ownership is associated with belief that the shock would cause more demolition of affordable homes, worse quality of life, more expensive housing next-door to affordable homes, and higher rents.

The second plot in Figure E.2 provides a similar view of the relationships between the stage-2 mental models and price predictions. Two clusters of correlated items stand out. First, people who expect a positive supply shock to increase (decrease) prices in one market segment generally expect it to do the same thing to prices in other segments (see the top-right corner of the figure). For example, respondents who expect new housing in expensive neighborhoods to decrease prices in less-expensive neighborhoods also expect new housing in less-expensive neighborhoods to decrease prices in the same less-expensive neighborhoods. Second, there are strong positive associations among the view that corporate ownership raises rents, that rich in-movers raise rents, and that demolition of affordable homes raises rents for other affordable homes. This complex of concerns is often voiced by elite opponents of new market-rate housing in expensive cities (Been, Ellen and O'Regan, 2019).

E.2.3 Subgroup Analysis of Mental Model Questions

Figure E.3 shows agreement with the mental model questions subset by tenure. The distribution of owner and renter responses was similar on nearly all of the items. There were some modest owner/renter differences on the items that connote gentrification, but no consistent pattern. Renters were a little more pessimistic than owners that more housing in less-expensive areas would bring down prices and rents in same less-expensive areas (Part 1, row 1), but a marginally higher proportion of owners than renters believed that building expensive new homes causes the price of more affordable housing next door to increase (Part 2, row 4). Owner and renter beliefs about the effect of rich in-movers on prices and rents were statistically indistinguishable (Part 2, row 3).

Relative to owners, renters did tend to predict that the supply shocks would result in more rich in-movers in lower-income areas (Part 2, row 3). But renters were also more optimistic than owners that redevelopment of existing urban and suburban lots at higher density would result in more new housing for people like them (Part 2, row 5). Owners (relative to renters) predicted worse quality-of-life impacts from the neighborhood-density and, less clearly, the transit shocks, whereas there were little or no owner/renter difference on the quality-of-life impacts of the sprawl and technology shocks (Part 2, row 2).

On most stage-2 mental model questions where a very large supermajority of owners chose the same answer, we observe a little more diversity of opinion among renters. This may be due to greater survey satisficing among renters.

Figure E.4 disaggregates beliefs based on whether the respondent is above or below the sample median of our index of zero-sum thinking. Like the owner / renter contrast, the high / low zero-sum thinking contrast reveals more similarities than differences. However, people who are high in zero-sum thinking were more likely than their less zero-sum counterparts to believe that the development of new housing—whether in expensive or inexpensive neighborhoods—increases home prices and rents in less-expensive neighborhoods (Part 1, rows 1 and 2). They were also less likely to believe that state-preemption policies that allow for greater density in already-developed areas (denser neighborhoods, transit) would increase the availability of homes in less-expensive areas (Part 1, rows 1 and 2), and more likely to believe that those interventions would increase the demolition of affordable homes (Part 1, row 4) and induce rich people to move into affordable neighborhoods (Part

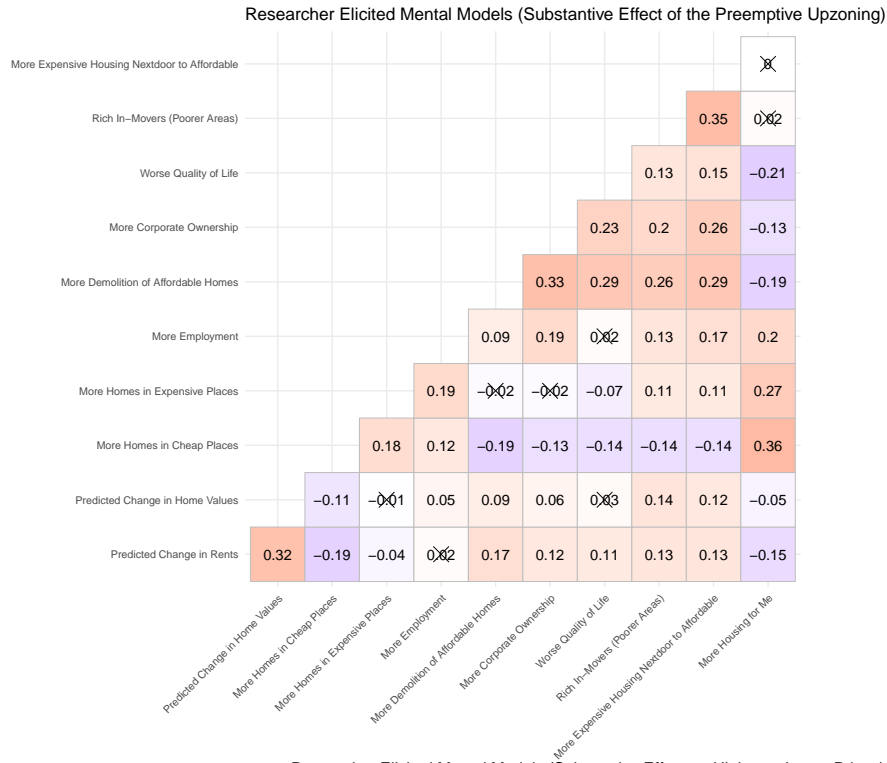


Figure E.2: Bivariate correlations among elicited directional price and rent predictions, and mental models of supply-shock effects. Rent predictions and modestly negatively correlated with belief that the supply shock would result in more homes in inexpensive places and more homes for “people like me.” In general, correlations among material-effect items (stage 1) are stronger than among price-effect items (stage 2), which is likely due to the fact that most stage-2 items had near-consensus answers. The stage-2 question that correlates mostly strongly with predicted effects of the 10% supply shock on home prices and rents is the question about the effect of new housing for people like me on prices and rents.

2, row 3). And, as expected, respondents with a proclivity for zero-sum thinking were somewhat more likely to predict an increase in corporate ownership from their assigned scenario, and a upward effect of corporate ownership on prices and rents (Part 2, row 1). Contrary to our conjecture, however, respondents who are high in zero-sum thinking were not notably more optimistic than other respondents about the material effects of a supply shock caused by technological change rather than government intervention, and they were actually less likely than other respondents to think that new housing for people like them would reduce prices and rents for people like them (Part 2, row 5).

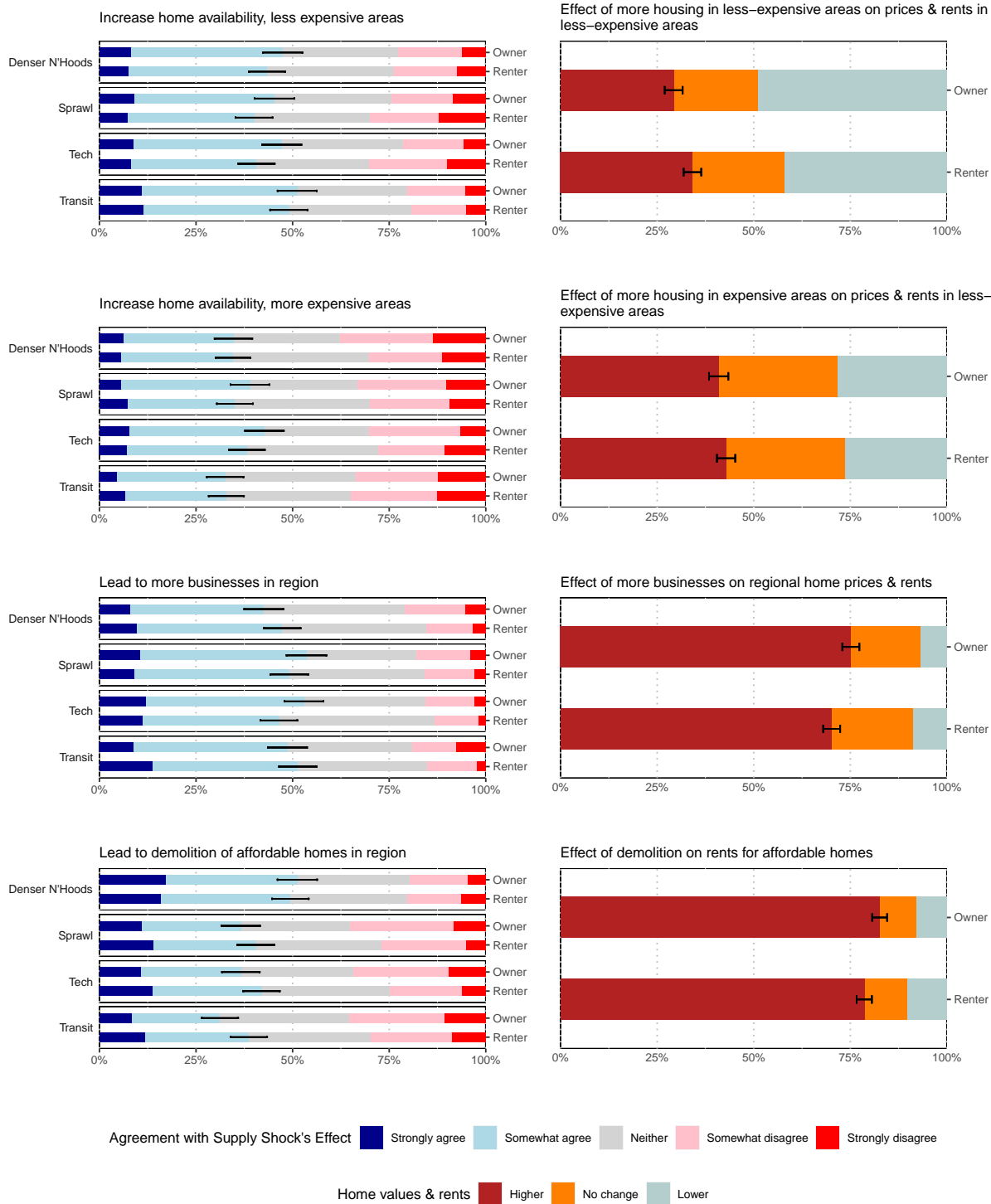


Figure E.3: Part 1: Mental models, subset by respondent tenure. Plots in left column depict agreement with statements about material effects. Plots in right column show stated expectations about how each material phenomenon, *ceteris paribus*, affects prices and rents.

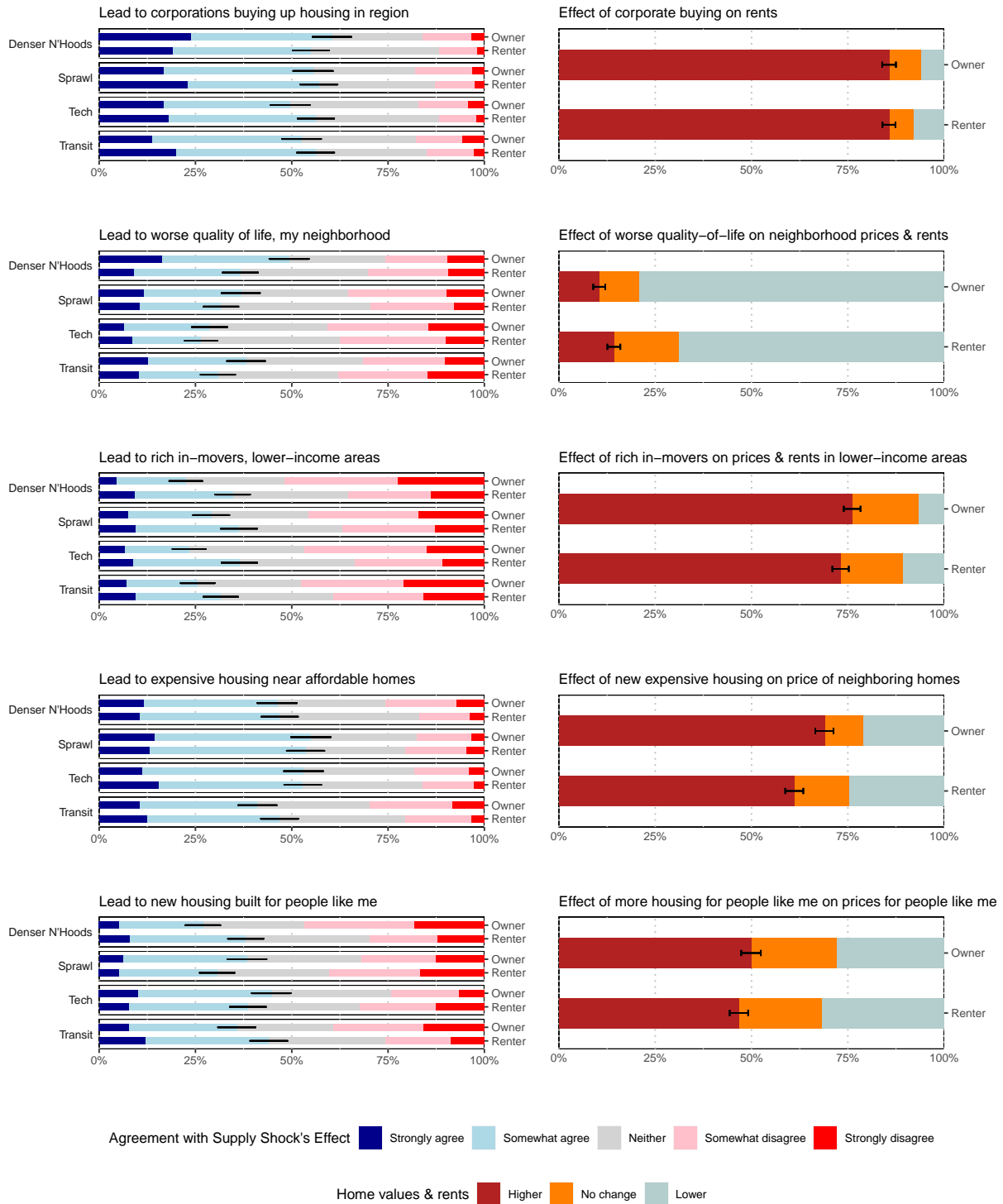


Figure E.3: Part 2: Mental models subset by respondent tenure. Plots in left column depict agreement with statements about material effects. Plots in right column show stated expectations about how each material phenomenon, *ceteris paribus*, affects prices or rents.

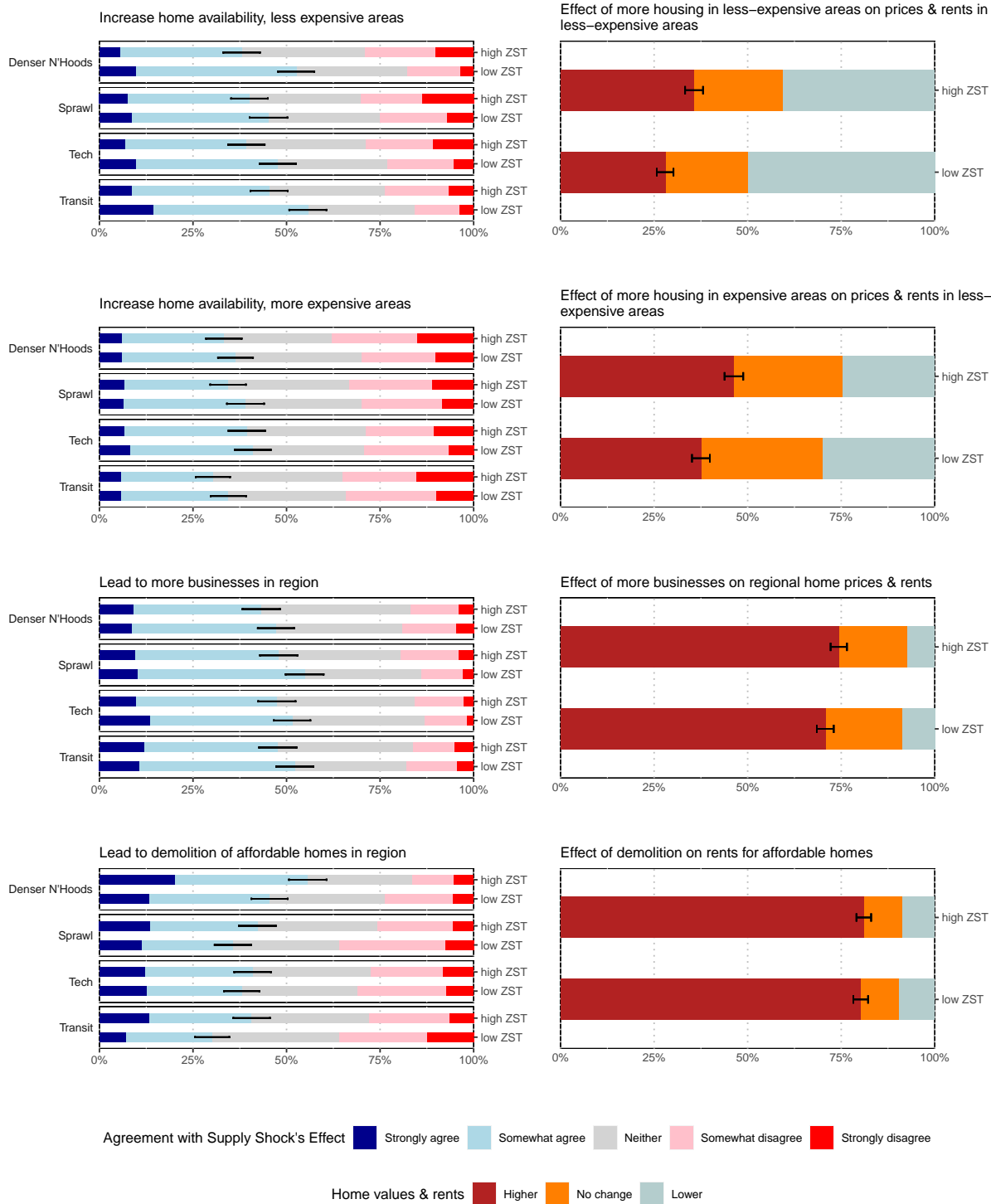


Figure E.4: Part 1: Mental models, subset by zero-sum thinking (median split). Plots in left column depict agreement with statements about material effects. Plots in right column show stated expectations about how each material phenomenon, *ceteris paribus*, affects prices and rents.

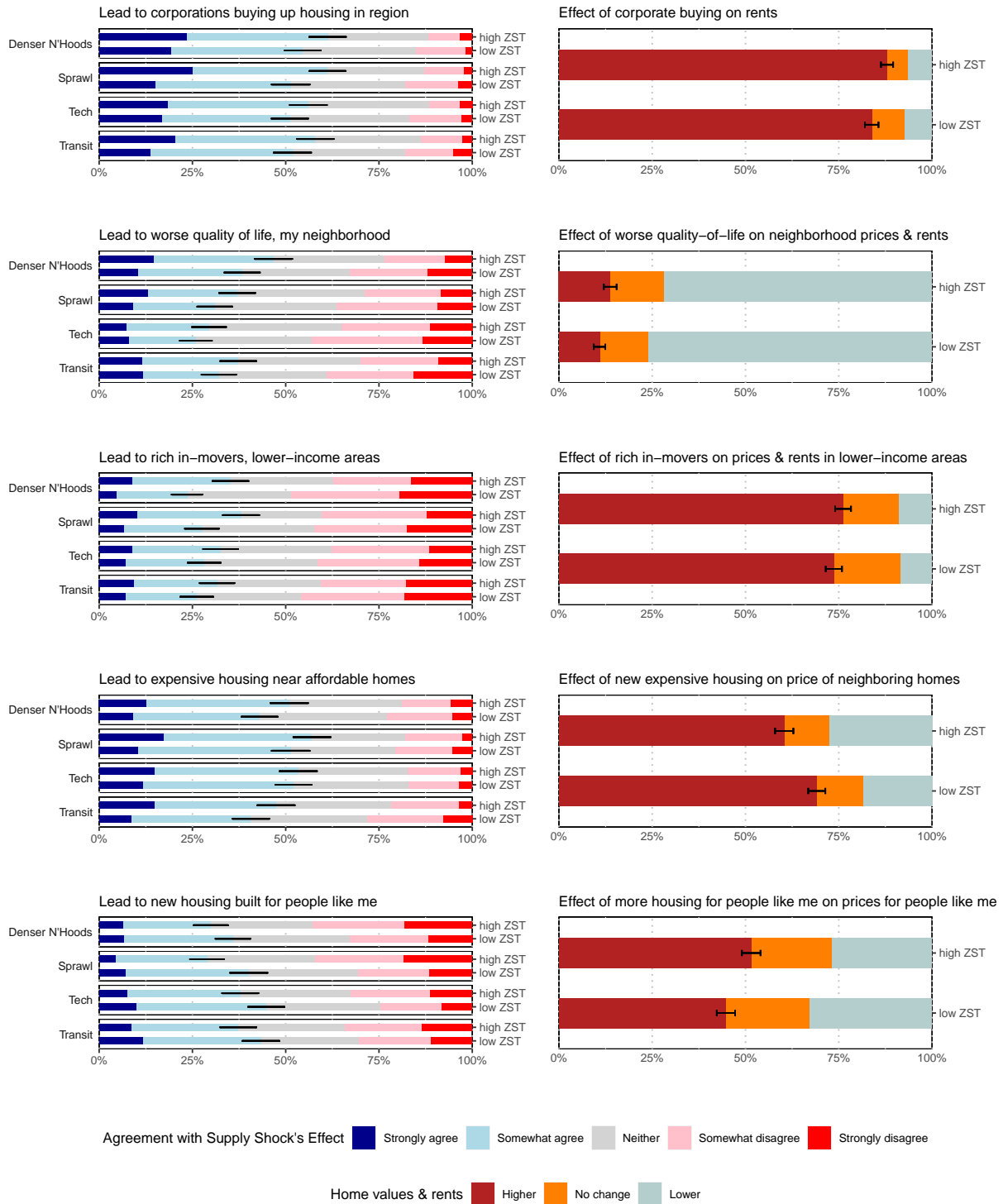


Figure E.4: Part 2: Mental models subset by zero-sum thinking (median split). Plots in left column depict agreement with statements about material effects. Plots in right column show stated expectations about how each material phenomenon, *ceteris paribus*, affects prices or rents.

E.2.4 Modeling Beliefs Associated with Supply Skepticism

Which set of factors included in the Stage 1 and Stage 2 mental models are most strongly associated with elicited predictions of the effect of a 10% regional supply shock on home prices and rents? We tackle this question in several ways.

We report several exploratory models of price and rent predictions as a function of the full set of mental models, as well as subsets chosen with machine learning algorithms. We also report an off-plan dominance analysis of directional price and rent predictions as a function of responses to the stage-1 and stage-2 mental model questions, plus interactions between the associated pairs of stage-1 and stage-2 questions, to see which pairs of questions do most of the work in the model. The main takeaway is that the mental models, as a whole, do not have much explanatory power. A linear model using stage 1, stage 1, and stage-1-by-stage-2 interaction terms only explains about 12% of the variance in directional rent predictions, and 6% of the variance in directional home-value predictions. A dominance analysis shows that the pair of mental-model questions about “more housing for people like me” accounts for more of the statistical model’s explanatory power than any other pair of mental-model questions.

Mental Models Dominance Analysis

A dominance analysis (Azen and Budescu, 2003) compares each predictor’s relative contribution to the total variance predicted by a model. The dominance approach has been used both by economists studying housing (e.g. Müller and Gsottbauer, 2021) and by political scientists working in other areas (see ?). Specifically, we treat each of the nine material-effect (stage 1) questions, the corresponding price-effect (stage 2) question, and the interaction of the two as a “set” of predictors and compare the percentage of the total variance explained by each of the nine sets. See Table 9 in the paper for a summary of the stage 1 and stage 2 questions.³⁸ These measures sum to 100%.

As the Standardized Dominance columns in Table 10 show, respondents consideration of whether the supply shock scenario would result in more housing for people like them as well as their beliefs about how this would affect prices and rents for people like them dominated all other mental models, for both dependent variables. Thoughts about the supply shock’s effect on housing supply in more affordable areas came in second for predictions about rents, but thoughts about gentrification were second for predictions about home prices. Neither statistical model had much explanatory power overall, explaining just 6.17 and 12.41 percent of the total variance in directional home prices and rent predictions, respectively. Though one should be cautious about making substantive interpretations based on this analysis, we also include coefficients for the OLS models used in the dominance analysis in Table 11. Either other mental models are at play or respondents relied on other heuristics to guide their price and rent predictions.

³⁸Calculations were performed with the R package *domir*. See <https://cran.r-project.org/web/packages/domir/domir.pdf>

Rank	Predicted Home Values		Predicted Rents	
	Set	Stand. Dominance	Set	Stand. Dominance
1	Set: Create new housing for people like me	34.78	Set: Create new housing for people like me	32.91
2	Set: Lead to gentrification	17.69	Set: Increase home availability, less expensive areas	23.78
3	Set: Increase home availability, less expensive areas	16.20	Set: Lead to demolition of affordable homes	10.41
4	Set: Lead to expensive housing near affordable homes	10.16	Set: Lead to gentrification	9.55
5	Set: Increase home availability, more expensive areas	6.55	Set: Lead to worse quality of life	7.33
6	Set: Lead to demolition of affordable homes	5.62	Set: Lead to expensive housing near affordable homes	5.56
7	Set: Attract businesses to area	3.66	Set: Increase home availability, more expensive areas	5.37
8	Set: Lead to worse quality of life	3.38	Set: Lead to corporate ownership of housing	4.26
9	Set: Lead to corporate ownership of housing	1.95	Set: Attract businesses to area	0.83

^a Total Variance of Home Price Predictions Model: 6.17

^b Total Variance of Rent Predictions Model: 12.41

Table 10: Dominance Analysis. A “set” of predictors consists of one of the nine material-effect mental models, its corresponding price effect, and the interaction of the two. The Standardized Dominance measure sums to 100% and measures each set’s contribution to the overall model R^2 .

	Predicted Change Home Prices	Predicted Change in Rents
Lead to more businesses in region	0.044 (0.027)	0.021 (0.026)
Effect of more businesses on regional home prices & rents	0.094 (0.102)	-0.052 (0.096)
Lead to more businesses to area x Price prediction	-0.022 (0.029)	0.009 (0.027)
Lead to demolition of affordable homes in region	0.017 (0.027)	0.061 (0.026)*
Effect of demolition on rents for affordable homes	-0.039 (0.091)	0.001 (0.088)
More demolition of affordable homes x Price prediction	0.003 (0.027)	-0.018 (0.026)
Lead to corporations buying up housing in region	0.014 (0.031)	0.037 (0.031)
Effect of corporate buying on rents	0.069 (0.109)	0.069 (0.111)
Lead to corporations buying up housing in region x Price prediction	-0.024 (0.031)	-0.009 (0.032)
Lead to worse quality of life, my neighborhood	-0.036 (0.022)	-0.035 (0.021)+
Effect of worse quality-of-life on neighborhood prices & rents	0.079 (0.079)	0.207 (0.074)**
Worse quality of life x Price prediction	-0.019 (0.023)	-0.052 (0.021)*
Lead to rich in-movers, lower-income areas	0.019 (0.024)	-0.015 (0.023)
Effect of rich in-movers on prices & rents in lower-income areas	-0.186 (0.081)*	-0.250 (0.078)**
Lead to rich in-movers, lower-income areas x Price prediction	0.049 (0.025)+	0.059 (0.024)*

Lead to expensive housing near affordable homes	0.054 (0.021)*	0.027 (0.020)
Effect of new expensive housing on price of neighboring homes	0.063 (0.076)	-0.064 (0.071)
Lead to new housing built for people like me	-0.028 (0.018)	-0.070 (0.017)***
Effect of more housing for people like me on prices for people like me	0.028 (0.059)	0.078 (0.057)
Lead to new housing built for people like me x Price prediction	0.034 (0.018)+	0.020 (0.017)
Increase home availability, less expensive areas	-0.049 (0.019)**	-0.076 (0.017)***
Effect of more housing in expensive areas on prices & rents in less- expensive areas	0.079 (0.065)	-0.074 (0.060)
Increase home availability, less expensive areas x Price prediction	-0.014 (0.019)	0.042 (0.018)*
Increase home availability, more expensive areas	-0.009 (0.018)	0.000 (0.017)
Effect of more housing in less-expensive areas on prices & rents in less-expensive areas	-0.105 (0.065)	-0.020 (0.062)
Increase home availability, more expensive areas x Price prediction	0.041 (0.020)*	0.017 (0.019)
Num.Obs.	2329	2318
R2	0.062	0.124
R2 Adj.	0.051	0.114

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11: Coefficients for linear models used in dominance analysis. Dependant variables are three-point directional predictions, pooled across all scenarios, of whether the 10% regional supply shock would increase, decrease or have no effect on rents or home prices.

LASSO Regression and Random Forest Models

The random forest model produces a statistic measuring the “importance” of each variable by the percent change in model mean squared error it contributes, on average, across all the models produced by this method (Grömping, 2009). Variables with higher values contribute most to correct classification out of sample. As shown in Figure E.5, variables that are more predictive of respondents’

predictions about home-price effects are not necessarily equally predictive of respondents' predictions about rent effects.

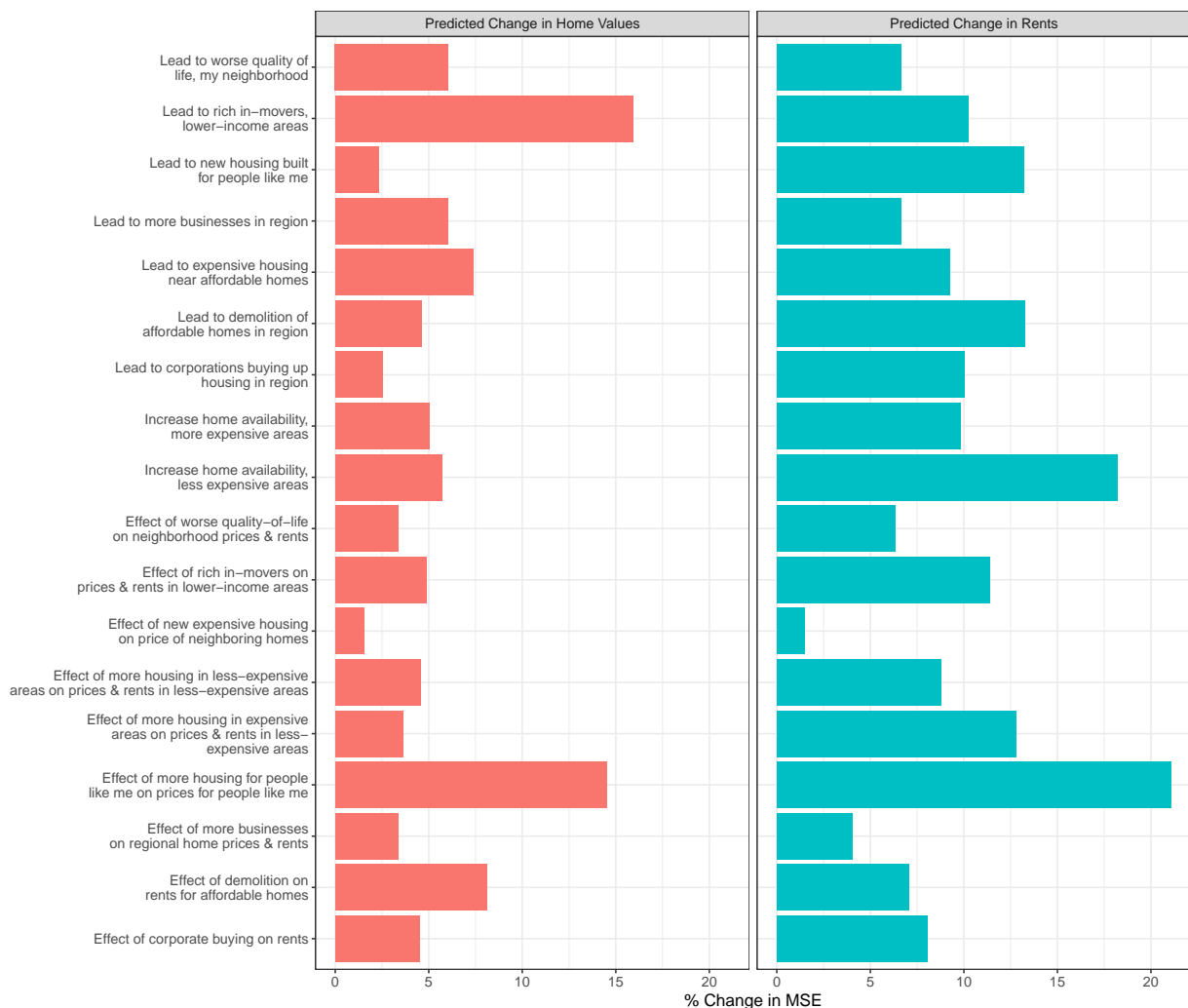


Figure E.5: Random forest model. Size of bar indicates relative predictive power of each variable.

We also implement a Least Absolute Shrinkage and Selection Operator or LASSO regression (Tibshirani, 1996) to identify the mental models that are most clearly associated with Supply Skepticism. LASSO regressions are popular for feature selection in situations where users with large datasets are uncertain as to which variables will correlate with the dependent variable, but are also concerned about overfitting. Introducing a shrinkage factor (denoted by λ) to the OLS model, these models reduce coefficient variance by adding a penalty to β estimates that varies depending on the size of λ , (a λ of 0 is equivalent to a typical OLS model.) As opposed to other penalized regressions such as Ridge regression, LASSO regressions reduce non-influential variable coefficients to zero.

We plot a modified LASSO regression to account for interactions between beliefs about secondary effects of upzoning and their impact on housing prices. We do so using the glinternet package (Lim and Hastie, 2015) for R which tests all possible pairwise interactions of included variables and produces a listing of the interacted variables that improved the predictive power of the model. We report those predictive interactions below for each dependent variable.



Figure E.6: Interacted LASSO model results. All interactions between first state mental models and price predictions produced zero coefficients, indicating they were poor predictors of respondents’ directional predictions about the effect of the supply shock on home prices and rents.

Neither model produced any predictive interaction between a mental model and its associated effect on prices (Figure E.6.) This result held when setting λ to one standard error greater than the value that minimizes cross-validation error (Krstajic et al., 2014; Hastie, Tibshirani and Friedman, 2009) or taking a less conservative approach and simply adopting the value that minimizes CV error. As such, it appears that the mental models we hypothesized would govern thinking about housing prices have little to no explanatory power in tandem.

Appendix F Other Housing-Market Beliefs (Surveys 2 and 3)

As explained above, we asked several other questions on Surveys 2 and 3 that we thought might correlate with predictions of the price and rent effects of a large regional supply shock. These include (1) agreement with the statement that “most of the new housing in my area has been built in places where home prices and rents are going up” (Survey 2); (2) the predicted effect of an expensive

city allowing more “luxury” housing to be built in a relatively affordable neighborhood on “rents for older housing in the same neighborhood”; and (3) whether it’s “closer to the truth” (A) that “developers make places more expensive when they build new housing,” or (B) that “developers don’t make places more expensive...; they just pick more expensive places to build in.”

Figure 4.4 in the main paper shows that the answers to these questions correlate in the expected way with directional predictions of the price/rent effects of a 10% regional supply shock, but that the correlations are very modest (roughly 0.10-0.20). Below, Figure F.1 shows the distribution of responses to all three questions.

Respondents who have an opinion about where new development in their area is occurring overwhelmingly believe that it’s happening in places where prices and rents are going up. Roughly 70% agree with the statement, and only about 5% disagree. Moreover, when asked whether it’s closer to the truth that new development is the cause or consequence of rising prices, respondents pick “cause” over “consequence” by a 2:1 margin. And about 70% of respondents say that allowing more “luxury” housing to be built in a relatively affordable neighborhood would lead to higher rents for older homes in the same neighborhood, with only about 15% predicting lower rents. Similarly, the mental-model questions on Survey 2 revealed that about 65% of respondents think that “when expensive new housing is built next door to older, relatively affordable homes, this generally increases the market value of the older homes” (as compared to fewer than 25% who think it generally decreases the value of the older homes). See Figure E.1.

These micro-level beliefs echo the views of elite supply skeptics (Been, Ellen and O’Regan, 2019), yet they they’re only very modestly correlated with beliefs about the effect of a 10% regional housing supply shock on prices. It is therefore implausible to view answers to the 10% supply-shock question as just a generalization of respondents’ beliefs about the local amenity effects of new housing development on prices and rents nearby. Bear in mind too that the one micro-level question on which we measured test-retest consistency (local effect on rents of allowing more luxury housing) had low consistency, similar or even lower than that observed for the 10% regional shock question. See Figure 4.5 in the main paper.

Appendix G Additional Evidence on Policy Preferences and the Motivated-Reasoning Conjecture (Survey 2)

One possible explanation for housing supply skepticism is motivated reasoning: people who don’t want land uses to change, but who want (or think they should say) that housing should be more affordable, may rationalize their preference for a preserve-the-status-quo land use policy by predicting that an increase in supply would not bring down prices.

As we note in Section 4.2, the fact that renters and homeowners (and people who do / do not say they want lower prices and rents in the future) make similar predictions about the effect of a supply shock cuts against the motivated-reasoning conjecture. On Survey 1 and 2, renters’ predictions (and those of people who want lower prices) were statistically indistinguishable from homeowners’ predictions (and those of people who don’t want lower prices), while on Survey 3, renters (and people who want lower prices) were *more* supply-skeptical than owners. See Figure 4.2.

When we designed Survey 2, we tried to provide a little more evidence on the motivated-reasoning conjecture by manipulating the salience of policy considerations. Specifically, we randomly assigned about half of the respondents to answer a battery of support-for-state-preemption policy

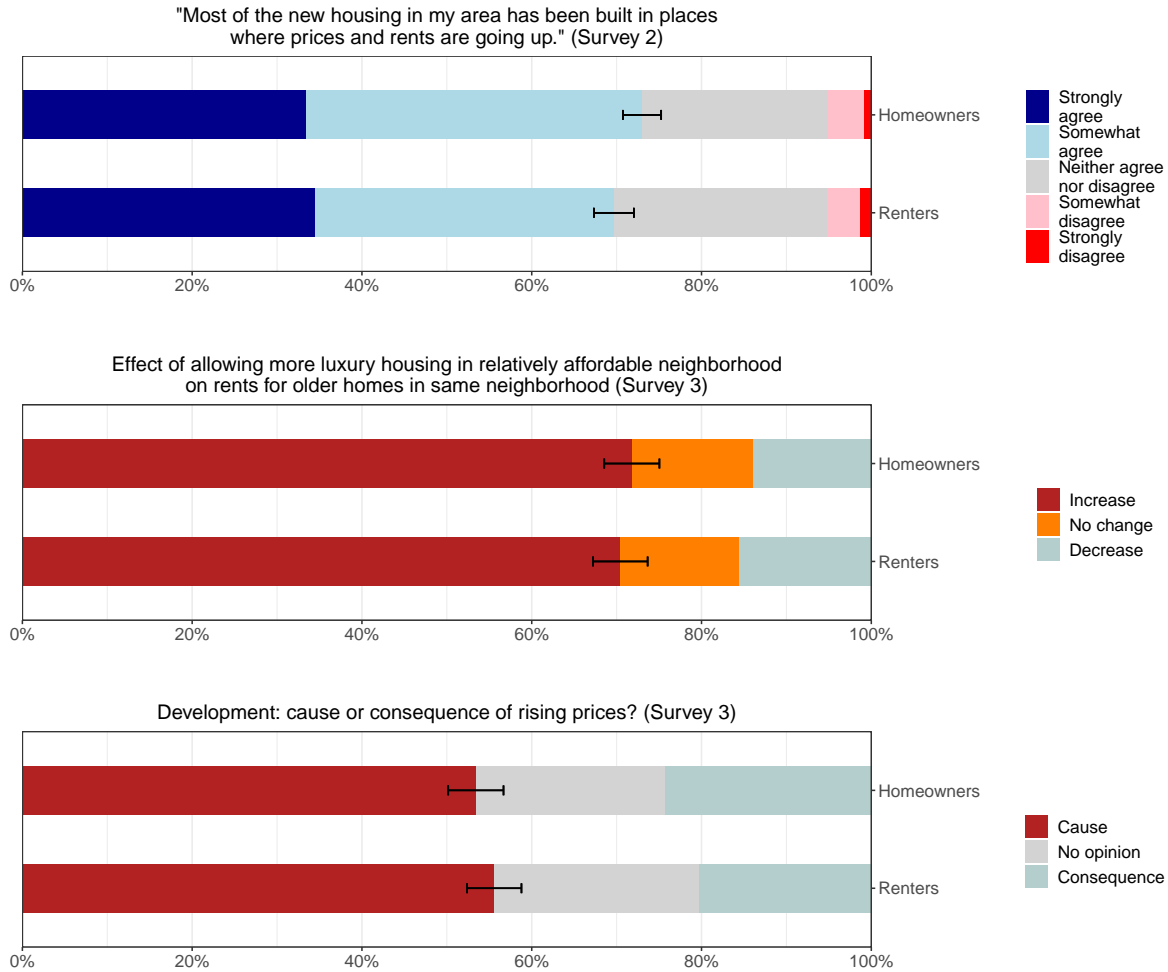


Figure F.1: Other housing-market beliefs. Error bars are 95% confidence intervals on proportion of respondents who agree with the statement about the location of housing development (top panel); who believe that allowing more luxury housing would cause rents to rise on older housing (middle panel), or who believe development to be the cause of rising prices (bottom panel).

questions before they received the questions about the effect of a 10% supply shock on prices and rents. The other respondents answered the policy questions after the supply-shock questions. We figured that answering the the policy-support questions would raise the salience of the policy choice, making respondents who received a supply-shock scenario caused by a policy they disfavor less likely to predict that the shock would affects prices and rents in a manner that aligns with their preference for future prices and rents.

The dependent variable in this analysis is a concordant prediction: for respondents who stated a preference for higher home prices and rents at the beginning of the survey, a prediction that the shock will increase prices; and for respondents who stated a preference for lower prices, a prediction that the shock will decrease prices.³⁹

³⁹For this analysis, we restrict the sample to respondents who said in response to the future-prices-in-your-city question that they wanted “higher” or “lower” prices.

One difficulty with this test of motivated reasoning is that we cannot observe a given respondent’s preference for state policies without applying the treatment, i.e., asking whether they favor or oppose the policy in question. Therefore, in our preanalysis plan, we hypothesized that the treatment would have a positive average treatment effect on concordant predictions for preemptive state upzoning policies that are *generally popular*, and a negative average treatment effect on preemptive state upzoning policies that are *generally unpopular*. Ex ante, we did not know which policies would prove popular or unpopular.

Figure G.1 shows that the transit-oriented development policy is fairly popular, supported by about 50% of owners and renters and opposed by only about 20%, whereas proposals to allow 2-4 unit buildings in single-family neighborhoods, or more suburban homes on open space, are substantially less popular, supported by about 25%-35% of owners and renters and opposed by about 40%-50%.

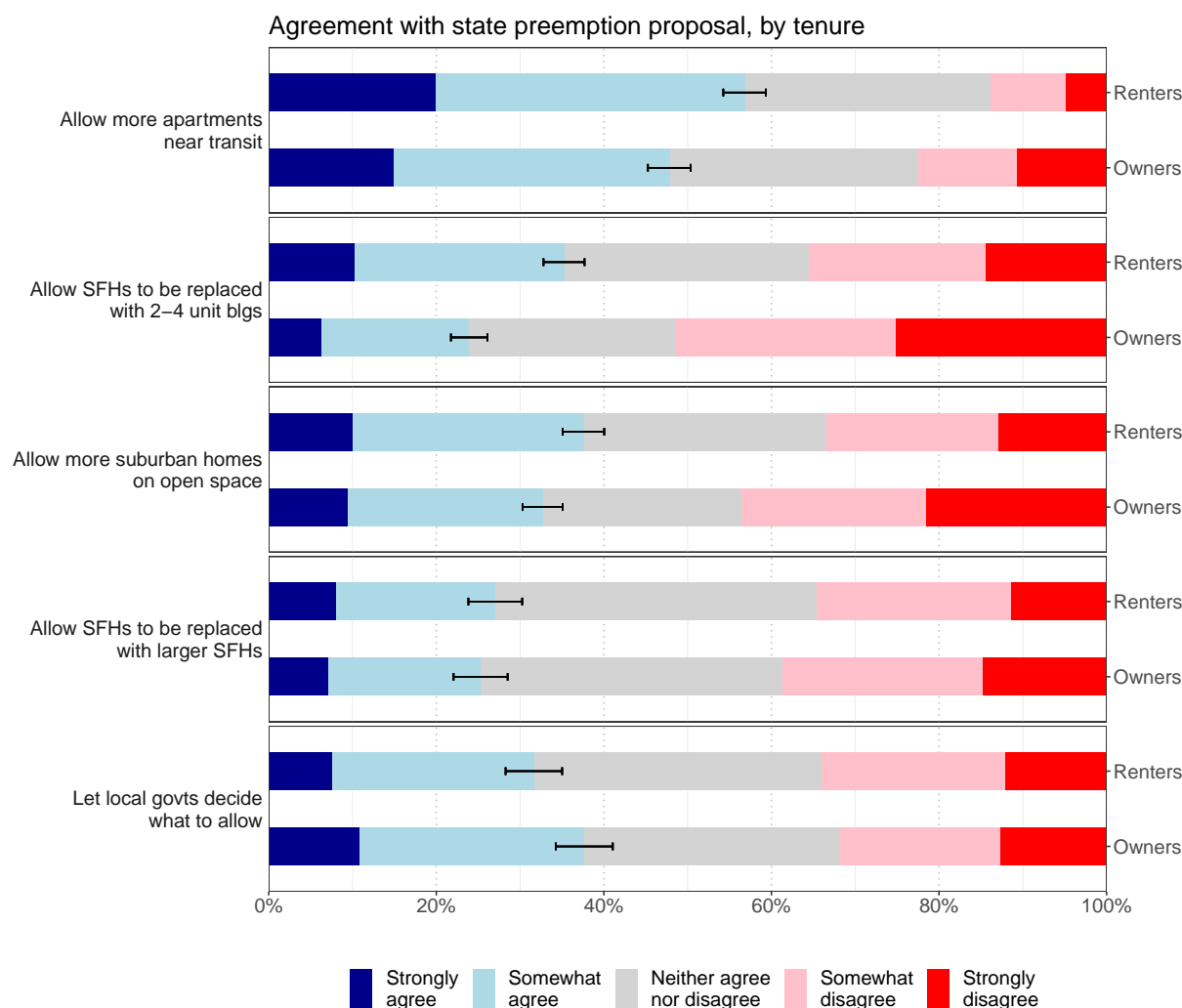


Figure G.1: Agreement with proposals for the respondent’s state to preempt local control over certain types of development. Survey 2. Error bars are 95% confidence intervals on proportion of respondents who agree with preemption proposal. See Table 4 for exact question wording.

Table 12 reports the average treatment effect of the state-preemption policy battery on

concordant price and rent predictions for each state upzoning policy. There is marginal evidence that the treatment reduces concordant predictions about the rent effects of the (generally unpopular) neighborhood-density scenario, and it may increase concordant predictions about the rent effect of the (generally popular) transit-oriented development scenario. This is consistent with motivated reasoning. However, the effects are imprecisely estimated and do not manifest in home-value predictions. Also, the policy-preference treatment does not reduce concordant rent-effect predictions in the sprawl scenario, which is nearly as unpopular as the neighborhood-density scenario. Given this, and given the lack of treatment effect on concordant home-value predictions, we think the “rent effect” in the denser-neighborhoods condition is probably just noise.

To be clear, this test does not rule out motivated reasoning. The point estimate of the treatment effect on concordant rent predictions in the generally unpopular neighborhood-density scenario is pretty large (10 pp), especially given that we are looking at the average effect across the whole sample, not just people who dislike the neighborhood-density policy. Also, the treatment itself is probably pretty weak. Though seeing the battery of support/oppose questions should increase the salience of the policy choice, respondents in the control condition may also rely on their policy preferences when making price predictions.

The strongest evidence against the motivated-reasoning hypothesis is that the distribution of homeowners’ rent-effect predictions is similar to that of renters (rather than rationalizing opposition to new development by more often forecasting that it would cause higher rents). See Figure ?? in the main paper. Also, the generally popular transit-oriented development scenario was not predicted to lower rents more than the generally unpopular proposals to allow more suburban development on open space or more single-family homes to be replaced with 2-4 unit buildings. See Fig C.1.

Cause of Supply Shock	Preference-Concordant Prediction	ATE	P-Value
Transit-Oriented	Rent	0.03	0.54
Transit-Oriented	Home Value	-0.01	0.88
Sprawl	Rent	0.02	0.69
Sprawl	Home Value	-0.02	0.59
Denser N’hoods	Rent	-0.10	0.02
Denser N’hoods	Home Value	-0.01	0.89

Table 12: Effect of Asking About Support for Preemptive State Upzoning on Concordant Price and Rent Predictions. Respondents in the treatment condition receive a battery of questions about support for state preemption of local land-use restrictions before they answer the question about the effect of a 10% regional housing supply shock on prices and rents for a typical housing unit in their city.

Appendix H Elicited Quantity and Price Effects of Upzoning (Survey 1)

Most of our housing-supply-shock results are from questions that stipulate an exogenous quantity change and elicit expectations about the effect of that change on home prices and rents. However, on Survey 1, we also presented an upzoning scenario and elicited expectations about its effect on quantity as well as price. The proposed rezoning would (1) “allow duplexes and triplexes in places where single-family homes are allowed” and (2) “allow new and renovated buildings to be one-and-a-half times as tall as nearby homes.” We randomized whether this proposed zoning change was for “your neighborhood only,” “residential neighborhoods throughout [the respondent’s city],” or “residential neighborhoods throughout [the respondent’s state].” To elicit quantity predictions, we asked “[B]y how much do you think the housing stock of the metropolitan region would grow as a result? By ‘housing stock,’ we mean the total number of houses, apartments, and condominiums.”

We also elicited predictions of the effect of the same rezoning on the price in five years of a hypothetical home in the respondent’s neighborhood, the rent in five years of a hypothetical apartment in the respondent’s neighborhood, and the rent in five years of a hypothetical apartment in the respondent’s city. These questions used the “Complex” elicitation format (see Table 2). We characterized the home or apartment by a stipulated counterfactual future (no-upzoning) price or rent, and we asked whether it would be worth or rent for “a lot more,” “a little more,” “the same amount,” “a little less,” or “a lot less” if the zoning change was adopted, assuming no change to the condition of the property.

Figure H.1 plots the distribution of responses to the quantity-effect question, disaggregated by tenure.

More than 75% of respondents predicted that their assigned rezoning scenario would increase the size of their metropolitan region’s housing stock. Homeowners and renters give similar answers. However, these results should be taken with several grains of salt, for two reasons. First, quantity predictions were only *slightly* larger for the statewide rezoning scenario (top) than the neighborhood rezoning scenario (bottom), which is implausible. The fact that many respondents predicted large regional changes from a neighborhood-level rezoning suggests that they were not paying close attention to the geographic scale stated in the vignette, perhaps due to the complexity of the question. Second, the response choices were not symmetrically distributed around zero, so guesswork-style responding anchored on the midpoint of the scale, or guesses drawn from the uniform distribution, would lead to the (possibly mistaken) conclusion that most respondents aren’t quantity skeptics.

Figure H.2 plots the distribution of responses to the price-effect questions, recoded to be on the same 3-point scale we have used for other price-prediction questions in this study. Again, we observe a similar pattern of responses from homeowners and renters. There is no expectation that upzoning over a larger area (citywide or statewide, relative to neighborhood) will create more downward pressure on prices, with the possible exception of renters’ beliefs about effects on citywide rents.

We figured that if price and rent predictions diverged, more people would predict an increase in home prices and than an increase in rents, reflecting the effect of developers’ competition for redevelopable sites on the price of single-family homes. We observe exactly the opposite. Roughly 40-45% of homeowners and renters alike believe that the upzoning plan would bring down home prices in their neighborhood, regardless of the geographic scale of the upzoning, whereas only about 20-25% believe it would bring down rents. About 45-50% say it would increase rents. These

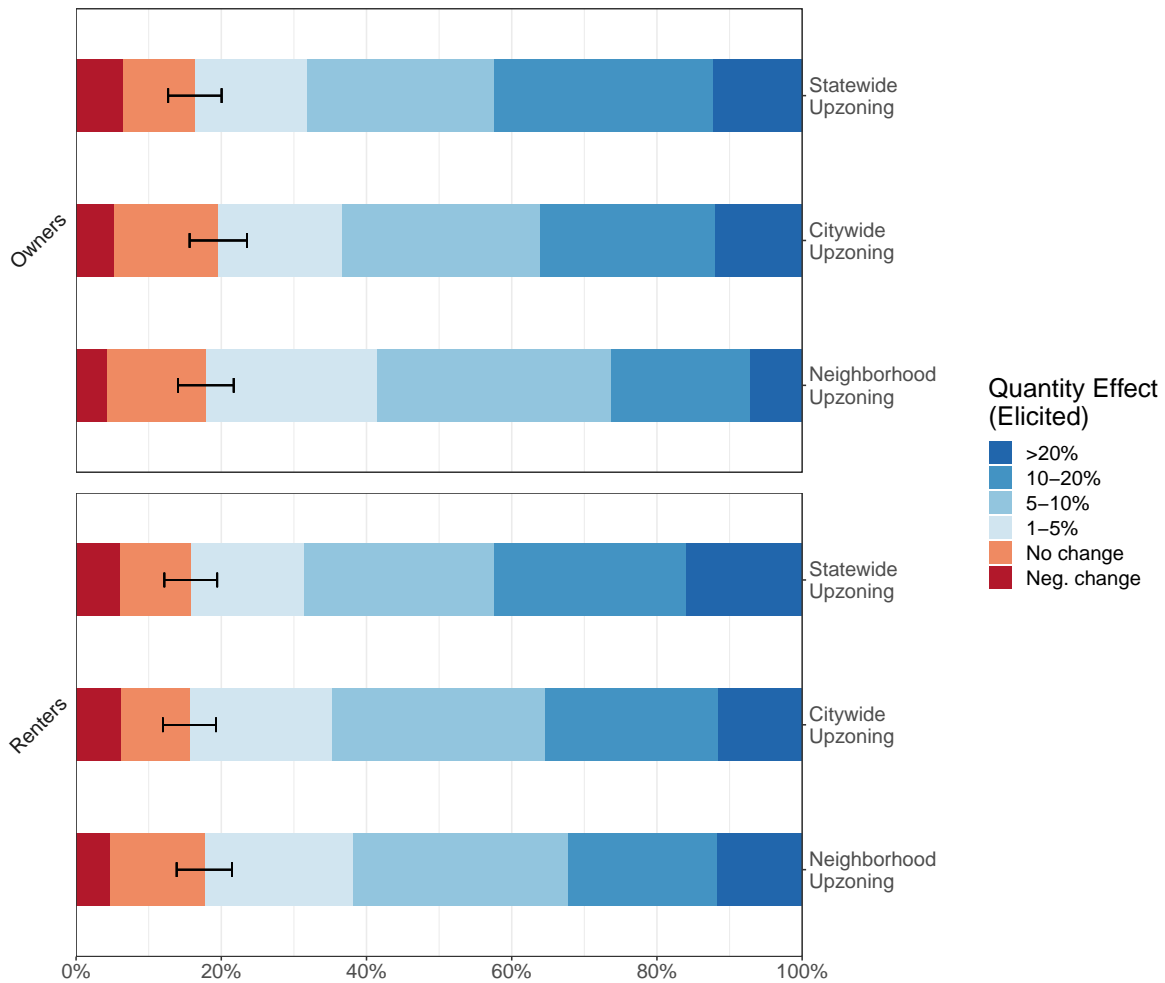


Figure H.1: Elicited effect of modest, “gentle density” upzoning on size of metro-area housing stock. Survey 1. Respondents were randomly assigned to neighborhood, citywide, or statewide version of the upzoning plan. Error bars denote 95% confidence interval on proportion of “quantity skeptics,” i.e., persons who predict negative or no change in quantity from the upzoning.

predictions are for a unit of fixed quality, whose condition does not change.

How are price and quantity predictions related? Not in the expected way. Figure H.3 plots the frequency of responses to the price questions by answers to the quantity question. If respondents were following conventional economic logic, the circles on the far left side of the plots would be decreasing in size from “Prices Up” to “Prices Down”; on the right side of the plot, the relationship would run the other way. That is people who predict big quantity effects would be most likely to predict negative price effects. A visual inspection of the plots shows that this is not true. In fact, if one treats the price predictions as cardinal values on 5-point scale, and the quantity predictions as cardinal values on a 6-point scale, the bivariate correlation between quantity and price predictions is mildly positive (0.08 - 0.10, depending on whether the price question is neighborhood price, neighborhood rent, or citywide rent). People who predict larger quantity effects also tend to predict higher prices.

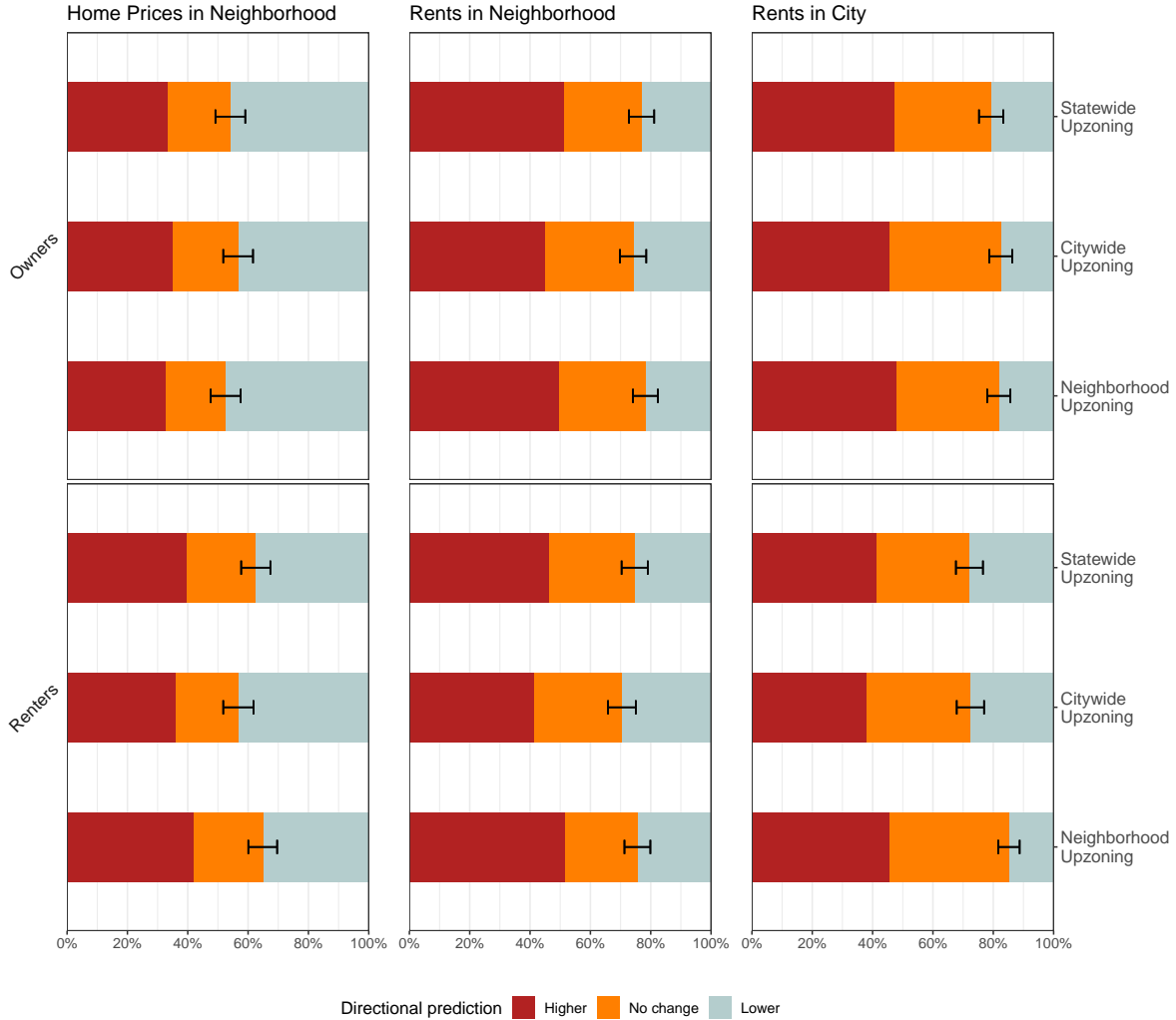


Figure H.2: Elicited directional effect of modest, “gentle density” upzoning on prices and rents. Survey 1. Respondents were randomly assigned to neighborhood, citywide, or statewide version of the upzoning plan. Each respondent predicted its impact on price in five years of hypothetical home in the respondent’s neighborhood, on rent in five years for a hypothetical apartment in the respondent’s neighborhood, and on rent in five years for a hypothetical apartment in their city. Error bars denote 95% confidence interval on proportion of “price skeptics,” i.e., persons who predict negative or no change in price from the upzoning.

Appendix I Additional Results on Housing Politics (Surveys 1, 2, & 3)

In the main paper, we showed that predictions of the directional effect on home prices (rents) of a 10% increase in regional housing stock are weakly correlated, in the expected direction, with support for upzoning among homeowners (renters). However, there is not even a weak correlation between skepticism about the effect of a supply increase on rents (prices) and support for “land banking,” a policy favored by elite supply skeptics. See Figure 4.6.

Here, we provide a few additional results on housing politics.

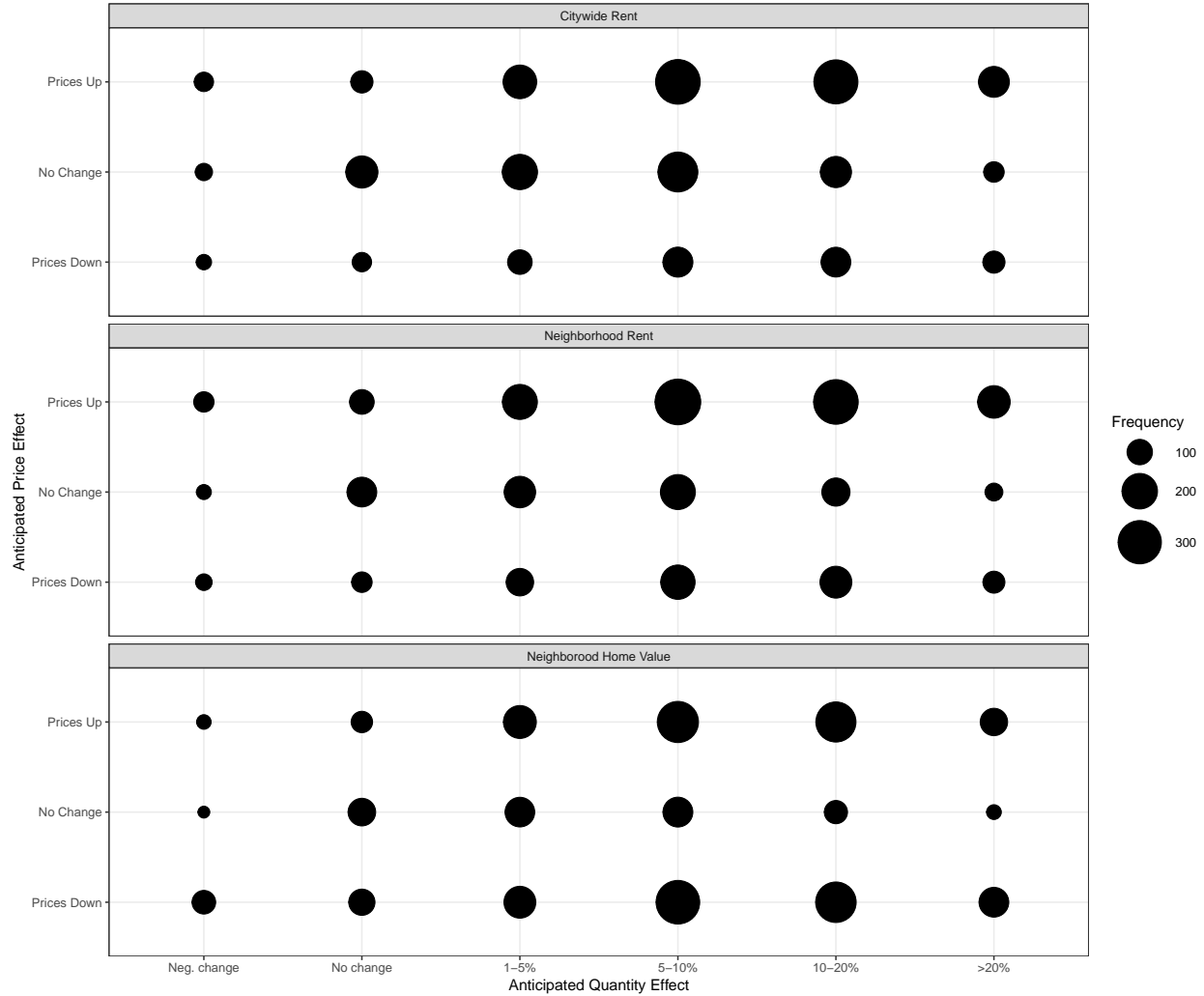


Figure H.3: Relationship between anticipated quantity and price effects of gentle-density upzoning. Survey 1. Quantity effects are predictions of change in metro region’s housing stock.

I.1 Support for Upzoning and Land-Banking, by Subjective Interest and Price Predictions)

Figure 4.6 in the main paper shows the distribution of support for upzoning and land-banking by elicited price predictions (for 10% regional supply shock) and an objective measure of self interest, namely tenure. Figure I.1 provides the analogous results subsetting respondents by the subjective measure of interest, namely, stated preferences for future home prices and rents in one’s city, assuming no change in the economy or quality of life. A comparison of the two figures shows that the results are essentially the same, whether one uses the objective or the subjective measure of interest.

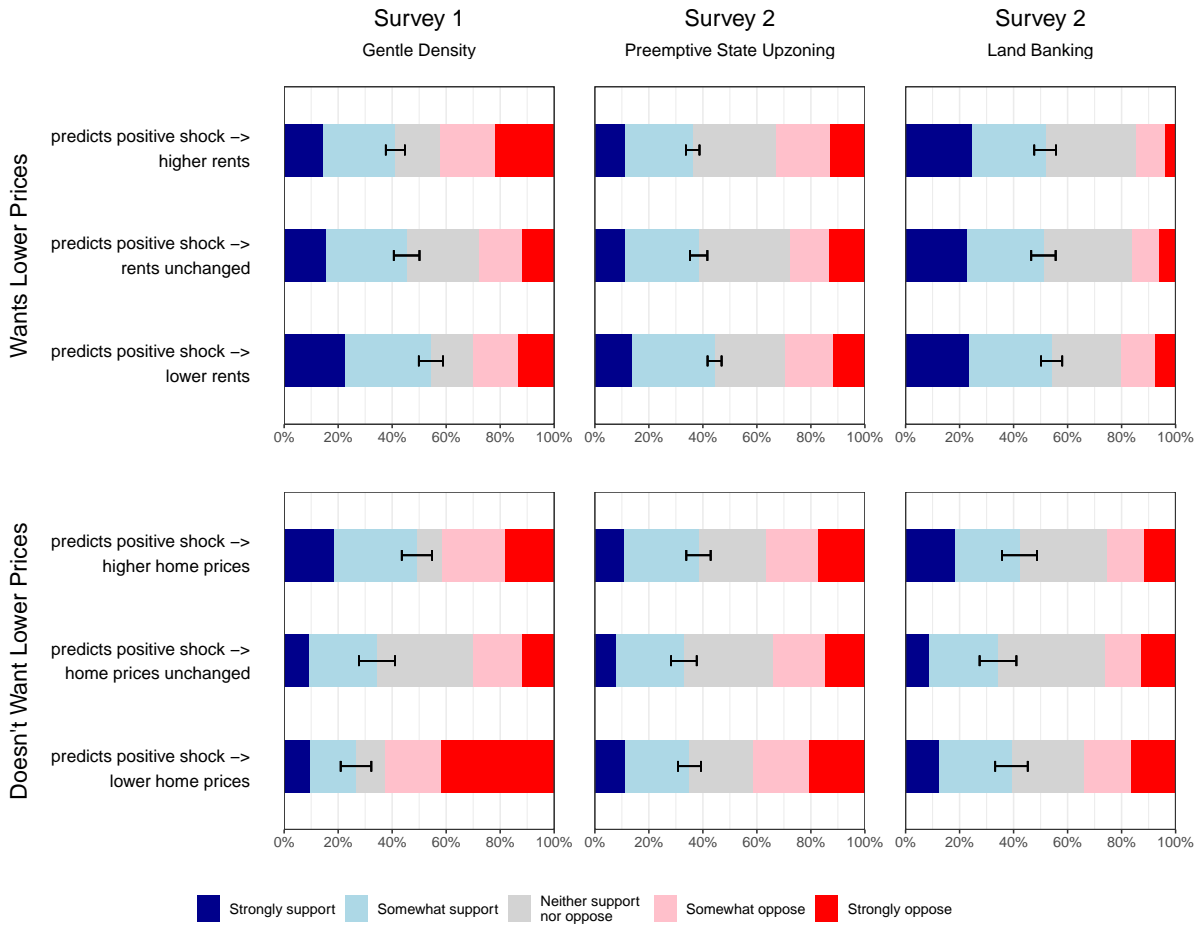


Figure I.1: Support for upzoning and land-banking, by stated desire for future home prices and rents in one's city. See Figure 4.6 in the main paper for corresponding results by objective interest (tenure).

I.2 Support for Upzoning, by Anxiety About Impacts on Value of One’s Home or Rent for One’s Apartment

Fischel (2001) hypothesizes that homeowner opposition to new development is driven by risk aversion. If this is right, we would expect to see (1) a substantial share of homeowners express anxiety about the *possibility* that upzoning would have a large adverse effect on their home values, and (2) that these homeowners would be more opposed to the upzoning than homeowners who express less worry. Similarly, Hankinson (2018) posits that renter opposition to new development in their neighborhood may be driven by analogous concerns, with renters worrying that new development would increase the rental value of nearby buildings.

To explore Fischel’s hypothesis, we posed the following question to homeowners after eliciting their predictions of the price and rent effects of the gentle-density rezoning (Survey 1) or 10% regional supply shock caused by preemptive state upzoning (Survey 2):

Set aside for a moment whether you think this zoning change would generally cause local market values to go up or down. How worried would you be that it might greatly reduce the market value of your home specifically?

[Very worried; Somewhat worried; A little worried; Not at all worried]

Similarly, renters were asked how worried they would be that it “might greatly increase the rental value of your home specifically.”

Figure I.2 shows the distribution of responses to these “anxiety” questions. Interestingly, a larger fraction of renters express concern about the possibility that the upzoning would cause a large *increase* in the rental value of their home than homeowners express concern about the possibility of a large *decrease* in the value of their home. Renter anxiety is actually about 5 pp higher on Survey 2 than Survey 1,⁴⁰ even though all of the rezoning scenarios on the main survey were statewide reforms, whereas two of the three gentle-density scenarios on the pilot would play out only in the respondent’s neighborhood or city. This suggests that the “renter anxiety” phenomenon identified by Hankinson (2018) is not, as he posited, limited to worries about the local effects of individual projects or neighborhood-scale rezonings.

Figure I.3 shows how support varies by anxiety about the possibility that the upzoning would have a large negative effect on the respondent’s home value (homeowners) or would greatly increase their rent (renters). On the Survey 1, we see strong support for Fischel’s (2001) conjecture. However, this result does not replicate on Survey 2. Homeowner anxiety levels were slightly higher on the Survey 1 overall (Figure I.2). Perhaps this was caused by our inclusion of a pictorial representation of the upzoning on the Survey 1 (a large triplex between two smaller single-family homes).⁴¹ Figure I.3 corresponds with a pre-registered analysis whose results are shown in Tables 13, 14 and 15.

⁴⁰And homeowner anxiety is about 5 pp lower.

⁴¹Note also that on Survey 2, only one of the three upzoning scenarios targets single-family home neighborhood. We don’t have enough observations to make credible inferences about each scenario individually, but for what it’s worth, restricting the sample to homeowners who evaluated the gentle-density scenario on Survey 2 yields a picture that looks similar to the full-sample result in Figure I.3.

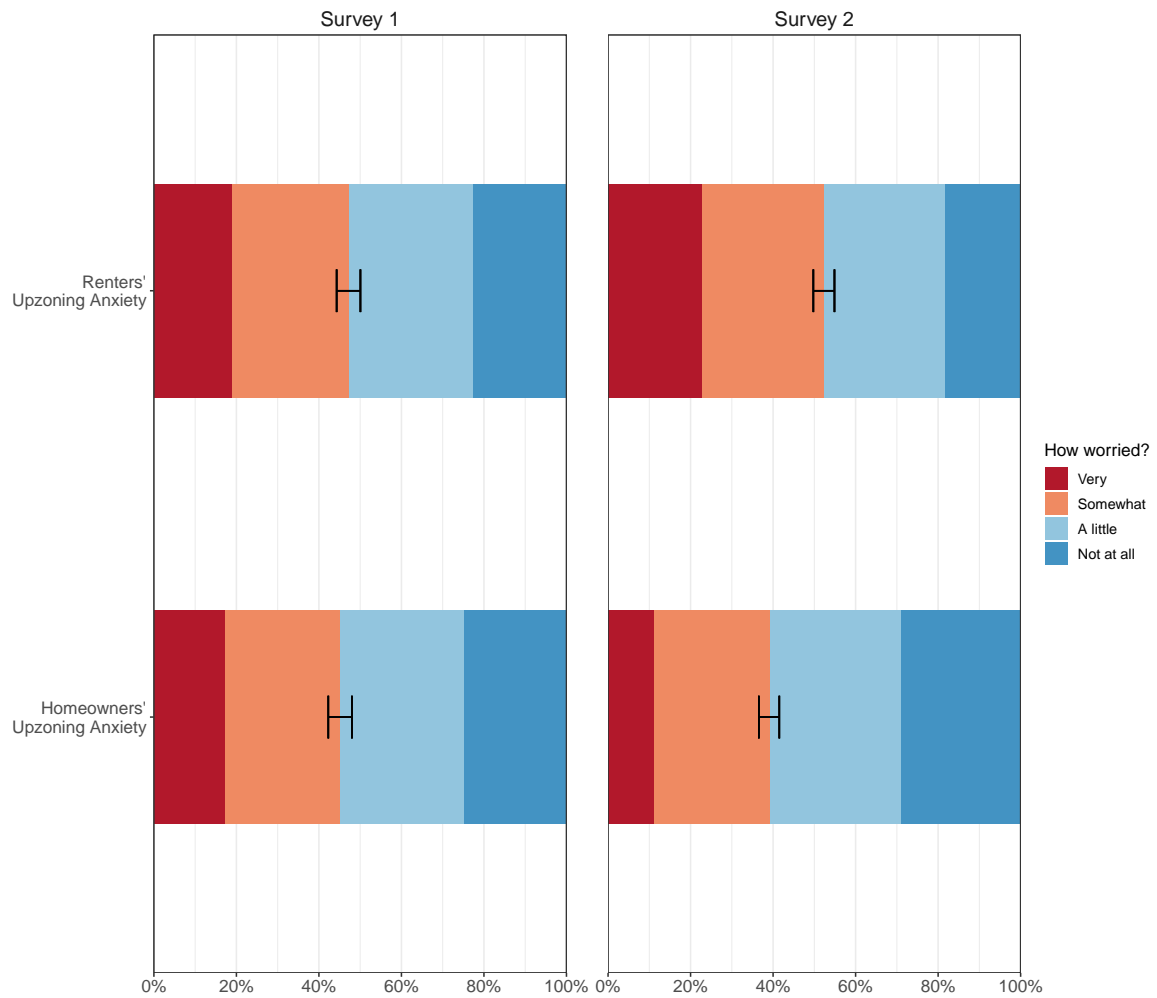


Figure I.2: Distribution of responses to question about perceived risk of gentile-density upzoning (Survey 1) or preemptive state upzoning (Survey 2) for respondent’s home value (homeowners) or rent (renters). Error bars depict share of renters or homeowners who say they would be “somewhat” or “very” worried.

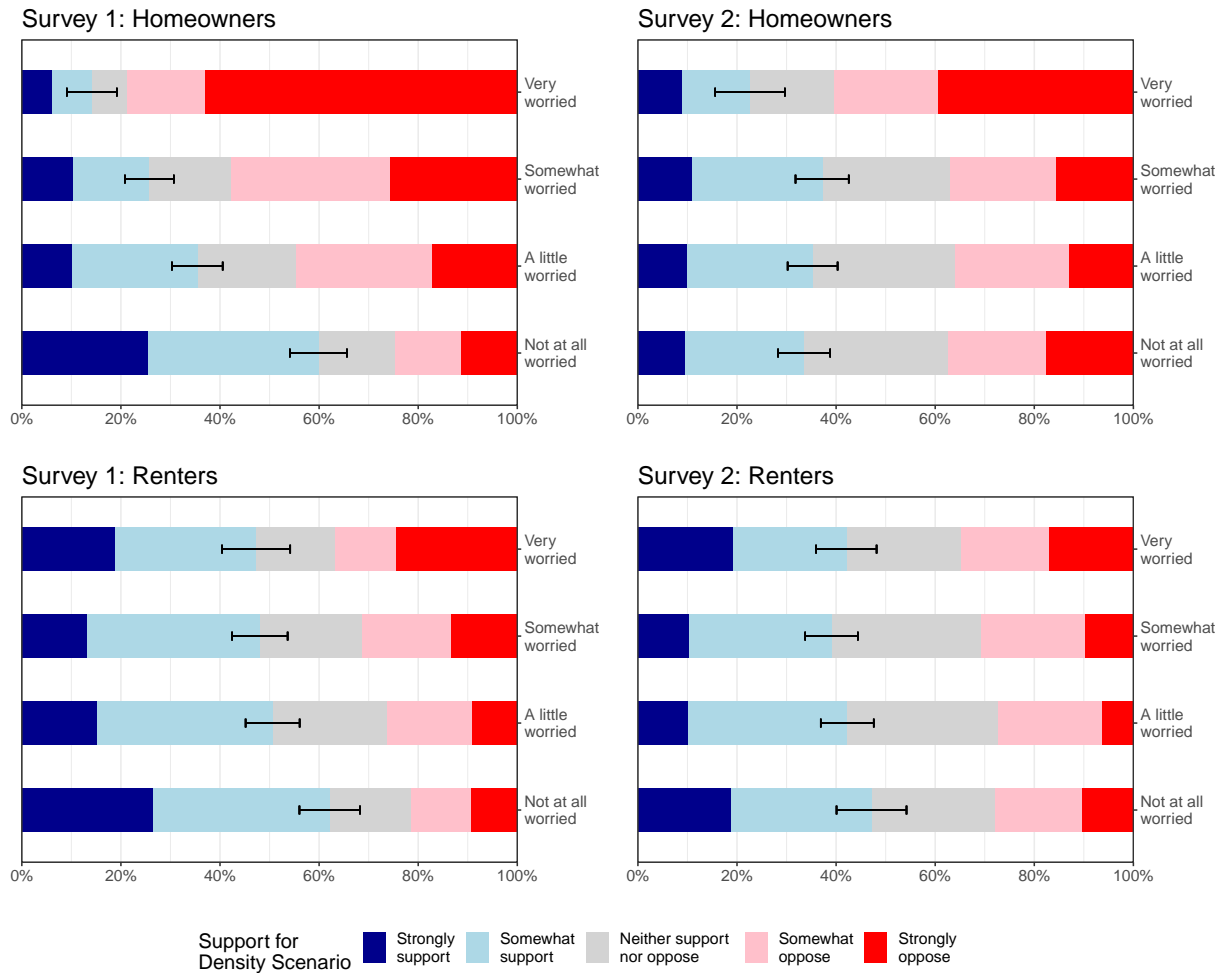


Figure I.3: Support for upzoning disaggregated by how worried the respondent is that the specific upzoning scenario “might greatly reduce” their own home’s value (homeowners) or “might greatly increase” its rental value (renters). Error bars are 95% confidence intervals on share of the group who somewhat or strongly support the upzoning proposal.

I.3 Correlations Among Housing Policy Preferences and Price Predictions)

Recall that Survey 2 elicited respondents’ support for several preemptive state upzoning policies, as well as support for banning new market-rate development on sites that could be developed for affordable housing in the future (“land banking”), and general support for more transit-oriented or suburban-sprawl development (see Table 4).

Figure ?? displays the bivariate correlations among these items.⁴² We also include directional predictions of the effect of a 10% regional supply shock on home prices and rents, tenure, and desire for future home prices and rents in one’s city. Unsurprisingly, support for more suburban or transit-oriented development within one’s region is highly correlated with support for state preemption of local restrictions on the same type of development ($r = 0.65$, $r = 0.54$). Support for new suburban development is also moderately and positively correlated with support for transit-oriented infill development ($r = 0.32$). What is most surprising is that support for the anti-YIMBY policy of *banning* new market-rate development on sites that could be developed for subsidized, affordable housing in the future is positively correlated with support for all of the pro-development policies ($r = 0.13 - -0.23$). When it comes to the mass public, it seems like the main housing-policy cleavage is not between people who favor market-rate development and people who only want more subsidized, affordable housing development, but between people who want the government to “do something” about housing costs and people who don’t.

I.4 Regression Models

In the preanalysis plan for Survey 2, we registered several exploratory models of support for preemptive state upzoning as a function of supply skepticism, stated desire for future housing prices and rents, and anxiety about the state policy’s impact one on the respondent’s home value (for homeowners) or rent (for renters). In some model specifications, we also included “material effect” predictions that we thought would be most strongly associated with support (quality of life, new housing for “people like me,” or a statement about which socioeconomic class the new housing would mostly be for).

One set of models (Table 13) proxies supply skepticism with a binary measure of “rent skepticism,” coded as 1 if the respondent predicted higher or unchanged rents from the 10% supply shock and 0 otherwise. In another (Table 14), we proxy supply skepticism with an analogous measure of home-value skepticism. In the third (Table 15), we use a median split on an index composed of responses to the two mental-model questions that tap beliefs about the effect of new expensive housing on the availability and affordability of homes in less expensive market tiers.⁴³

The dependent variable in each model is support for the preemptive state upzoning scenario to which the respondent was assigned (neighborhood density, transit, or sprawl). The models explain only about 2%-12% of the variation in support, with the models that include only the price prediction, anxiety and price desire variables performing the worst. The poor performance of these models is consistent with price predictions being mostly noise. (It may be that the dependent variable has a large stochastic component as well.) Also, the models pool across three very different types

⁴²This figure is off-plan.

⁴³Specifically, agreement with the statement, “This scenario would make it easier to find a home to buy or rent in the region’s less-expensive neighborhoods” [strongly agree . . . strongly disagree], and responses to the question “When more homes become available to buy or rent in a region’s more-expensive neighborhoods, this generally results in . . .” [(1) higher home prices and rents in the region’s less-expensive neighborhoods, (2) lower home prices and rents in the region’s less-expensive neighborhoods, or (3) no change in home prices and rents in the region’s less-expensive neighborhoods].

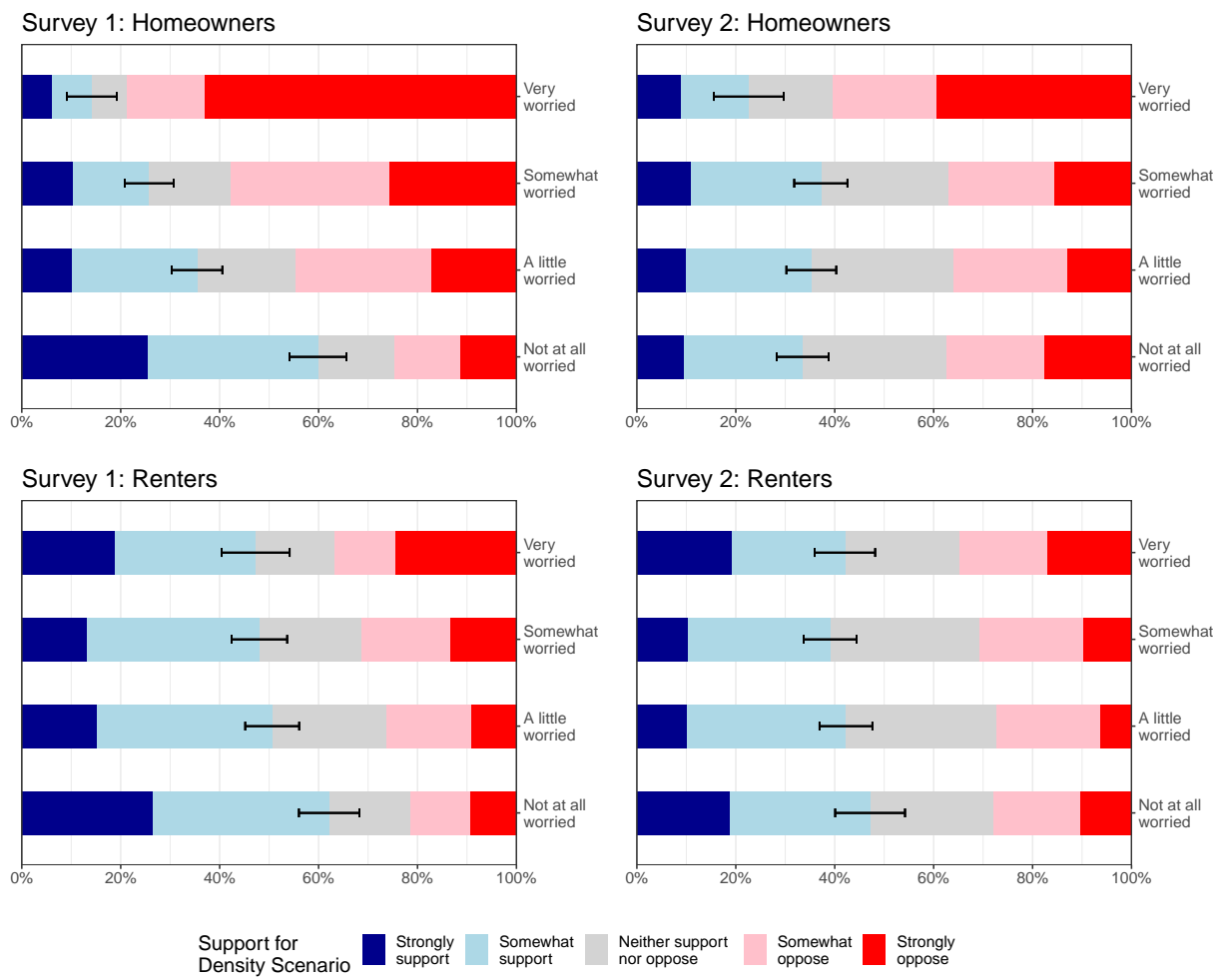


Figure I.4: Support for land-use policies. Survey 2. Also included are beliefs about the directional effect of a 10% regional supply shock on prices and rents; desire for future housing prices and rents in one's city, and tenure (homeowner v. renter).

of state preemptive upzoning (transit-oriented development, neighborhood density, and sprawl), and, as shown by the difference-in-means results in Figure ??, people seem to have quite different preferences as between these types of upzoning.

	(1)	(2)	(3)	(4)
(Intercept)	0.480*** (0.029)	0.470*** (0.028)	0.446*** (0.028)	0.407*** (0.045)
Rent Skeptic?	-0.108** (0.037)	-0.093* (0.036)	-0.057 (0.036)	-0.105** (0.037)
Wants Same/Higher Prices?	-0.136* (0.057)	-0.111+ (0.057)	-0.077 (0.056)	-0.103+ (0.056)
Price Anxious	-0.031* (0.015)	-0.006 (0.015)	0.003 (0.015)	-0.013 (0.016)
Rent Skeptic x Wants Same/Higher Prices	0.055 (0.069)	0.044 (0.069)	0.018 (0.067)	0.041 (0.068)
Upzoning Worsens Quality of Life		-0.079*** (0.015)	-0.055*** (0.015)	-0.076*** (0.015)
Upzoning Creates More Housing for Me			0.131*** (0.014)	
New Housing for Low-Mid Income				0.018 (0.045)
New Housing for Mid Income				0.086+ (0.046)
New Housing for Mid-Upper Income				0.163** (0.050)
New Housing for Upper Income				0.083 (0.072)
Num.Obs.	1084	1084	1083	1084
R2	0.023	0.048	0.116	0.061

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 13: Preregistered model of support for preemptive state upzoning as function of “rent skepticism” and other covariates. Rent skepticism is dummy variable indicating belief that 10% supply shock caused by preemptive state upzoning would not lower rents. In baseline model (1), a higher than median level of anxiety towards upzoning correlated with decreased support for the state preemption scenario.

	(1)	(2)	(3)	(4)
(Intercept)	0.442*** (0.028)	0.444*** (0.028)	0.430*** (0.027)	0.419*** (0.044)
Home Price Skeptic?	-0.032 (0.036)	-0.037 (0.035)	-0.018 (0.034)	-0.038 (0.036)
Wants Same/Higher Prices?	-0.115* (0.051)	-0.087+ (0.050)	-0.066 (0.049)	-0.084+ (0.050)
Price Anxious	-0.025+ (0.015)	0.005 (0.015)	0.015 (0.014)	0.003 (0.016)
Home Price Skeptic x Wants Same/Higher Prices	0.059 (0.065)	0.047 (0.064)	0.029 (0.062)	0.040 (0.064)
Upzoning Worsens Quality of Life		-0.098*** (0.015)	-0.073*** (0.015)	-0.096*** (0.015)
Upzoning Creates More Housing for Me			0.119*** (0.014)	
New Housing for Low-Mid Income				0.000 (0.046)
New Housing for Mid Income				0.046 (0.047)
New Housing for Mid-Upper Income				0.072 (0.051)
New Housing for Upper Income				-0.016 (0.067)
Num.Obs.	1136	1136	1134	1136
R2	0.008	0.046	0.102	0.050

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 14: Preregistered model of support for preemptive state upzoning as function of “home-price skepticism” and other covariates. Home-price skepticism is dummy variable indicating belief that 10% supply shock caused by preemptive state upzoning would not lower home values.

	(1)	(2)	(3)	(4)
(Intercept)	0.484*** (0.021)	0.473*** (0.021)	0.437*** (0.020)	0.423*** (0.036)
Housing Filtering Skeptic?	-0.157*** (0.030)	-0.132*** (0.030)	-0.058+ (0.031)	-0.148*** (0.031)
Wants Same/Higher Prices?	-0.098** (0.037)	-0.073+ (0.038)	-0.048 (0.036)	-0.078* (0.037)
Price Anxious	-0.017 (0.013)	0.008 (0.013)	0.014 (0.012)	0.004 (0.013)
Housing Filtering Skeptic x Wants Same/Higher Prices	0.052 (0.054)	0.037 (0.054)	0.009 (0.052)	0.046 (0.053)
Upzoning Worsens Quality of Life		-0.086*** (0.013)	-0.065*** (0.013)	-0.082*** (0.013)
Upzoning Creates More Housing for Me			0.123*** (0.013)	
New Housing for Low-Mid Income				0.019 (0.039)
New Housing for Mid Income				0.079* (0.040)
New Housing for Mid-Upper Income				0.130** (0.043)
New Housing for Upper Income				0.042 (0.057)
Num.Obs.	1491	1491	1489	1491
R2	0.028	0.057	0.115	0.066

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 15: Preregistered model of support for preemptive state upzoning as function of “filtering skepticism” and other covariates. Filtering skepticism is dummy variable indicating above-median level of skepticism that new housing in expensive areas would increase home availability or lower rents in less-expensive areas.

I.5 Attributions of Blame for Housing Costs

Complementing Figure 4.7 in the main paper, Figure I.5 breaks down the distribution of blame by tenure. Renters and homeowners generally held the same actors responsible for high housing prices, though renters were more likely to blame landlords and homeowners were somewhat more likely to blame developers. The same pattern holds across both surveys on which we included the blame question.



Figure I.5: Attribution of blame for high prices and rents, by tenure. Surveys 2 and 3. This figure depicts the proportion of respondents who listed the actor or cause in their top three. Error bars are 95% confidence intervals.

Figure I.6 displays bivariate correlations among the blame items, and elicited price and rent effects of a 10% regional supply shock. We also include party identification (measured on 7-point scale, with higher values corresponding to Democratic identification), support for more suburban development or more transit-oriented development in one's metro region, and, on Survey 2, support for "land banking" (banning new market-rate development on sites that could be developed for affordable housing in the future). Blame correlations on both surveys are similar. Respondents who blamed the federal and state government tended also to blame local governments, while those who

blamed developers and rich movers tended not to blame governments. Curiously, although landlords and developers are by far the most commonly blamed actors (see Figure 4.7 in the main paper), and though both actors may seem like easy scapegoats, there is no correlation between blaming landlords and blaming developers. Blame is not associated with directional price or rent predictions, and it's only very weakly associated with policy preferences (e.g. there is a slight positive correlation between blaming landlords and support for land banking).

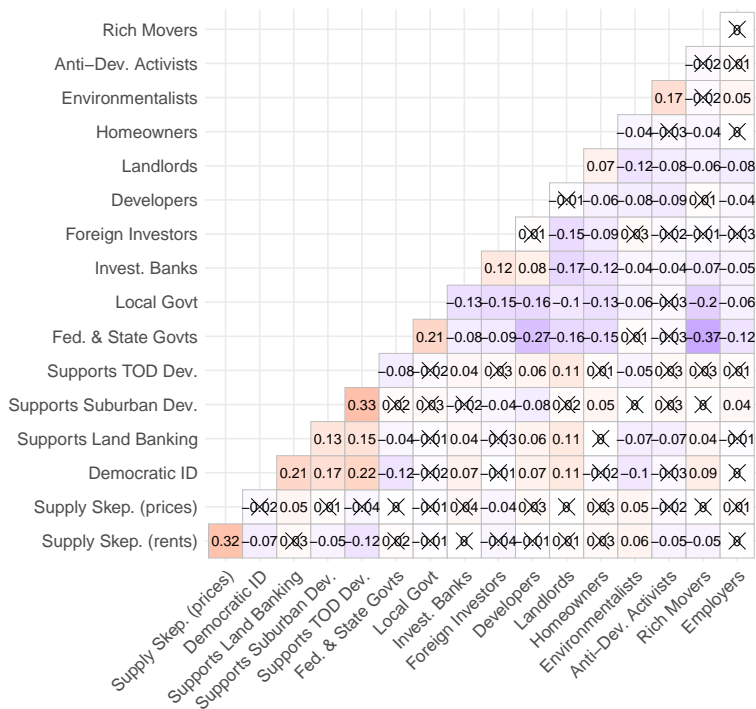
I.6 Natural Language Analysis

Near the beginning of Survey 1—before the zoning-change vignettes, and before providing respondents with any descriptive information about land-use regulation—we presented the following free-text questions:

- “When you think about regulation of land use and housing development by local governments, what are the main considerations that come to your mind?”
- “What would be the goals of a good policy about land use and housing development, in your view?”
- “What do you think are the problems with the current land-use and housing policies of local governments in the United States?”

We used natural-language processing algorithms to identify characteristic differences in homeowner and renter responses. See Figure I.7. Renters were more likely to express concern about rents and prices; homeowners were distinctly concerned about family, infrastructure, and neighborhood amenities like schools and open space.

Survey 2



Survey 3

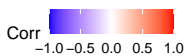
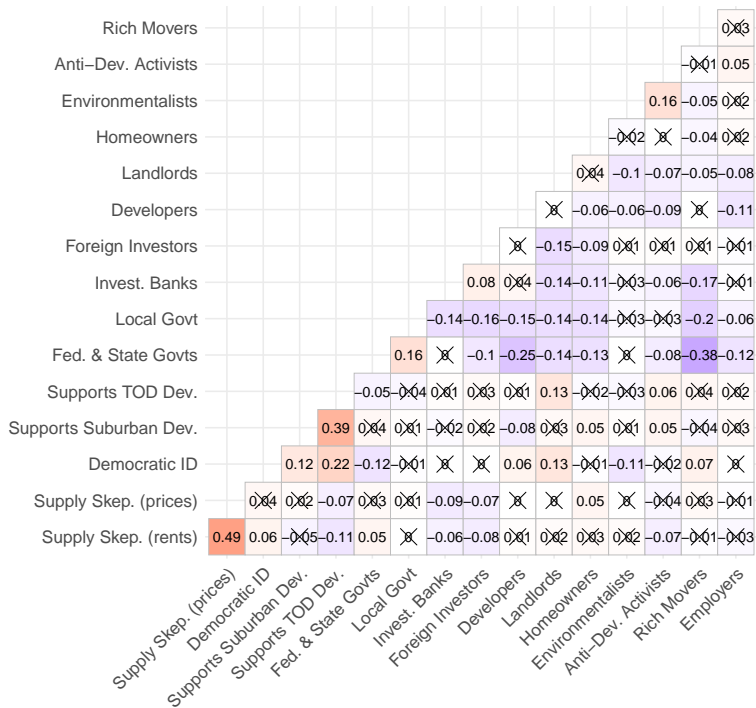


Figure I.6: Bivariate correlations among answers to the “blame” questions, elicited price and rent effects of 10% supply shock, and support for land-use policies. Surveys 2 and 3. An X through a correlation denotes that it is not statistically significant at the 95% level.

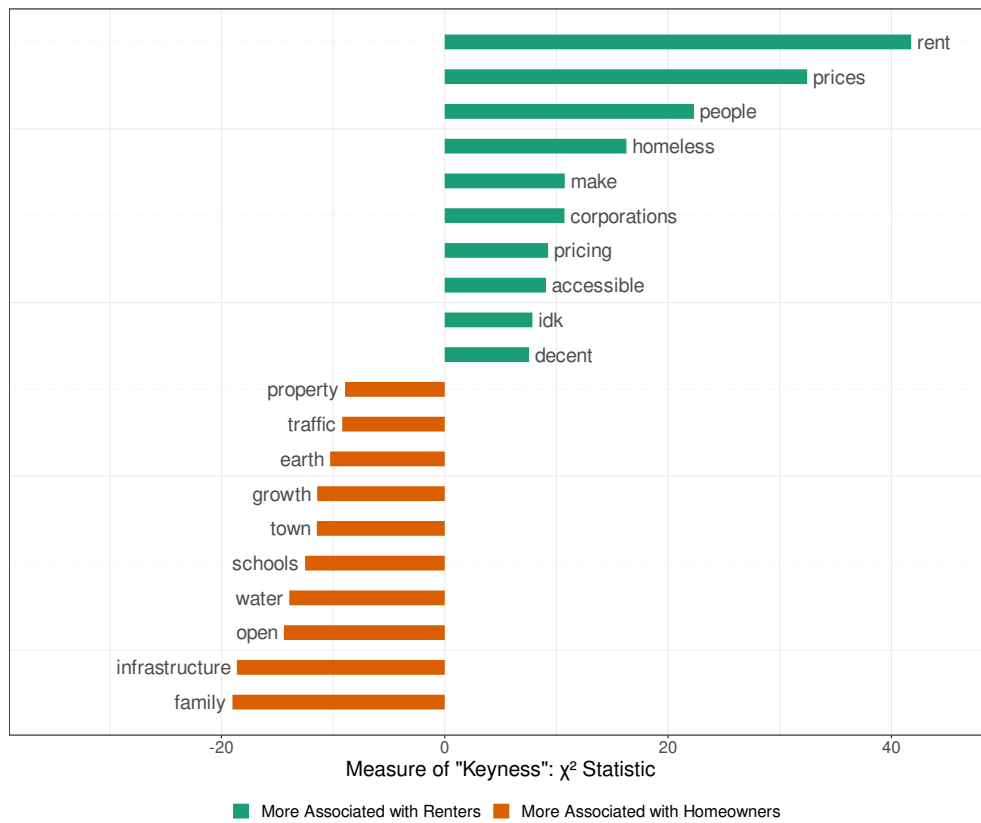


Figure I.7: Keynes analysis comparing renter and homeowner responses to free-text questions about land-use regulation. Survey 1.

Appendix J Respondent Demographics (Surveys 1, 2, & 3)

Table 16 benchmarks the demographics of our survey samples against the U.S. population in the zip codes that comprise our sampling frame. We aimed to sample equal numbers of renters and homeowners, so renters are over-represented in our sample. Latinos are somewhat under-represented, as are people with high household incomes and high monthly housing costs.

Table 16: Respondents demographics vs. U.S. Census benchmark. Pilot, main and follow-up surveys. Census information is for zip codes in sampling frame (2020 ACS 5-Year Estimates).

	Pilot Survey		Main Survey		Follow Up Survey		U.S. Census	
	Percent	Percent	Percent	Percent	Percent	Percent	Census Category	Percent SD
Age								
Male	52.00	49.00	49.00	49.00	49.07	49.07		4.62
Homeowner	46.00	47.00	47.00	46.00	62.54	62.54		18.71
Has B.A. or Above	74.00	35.00	35.00	36.00	34.43	34.43		18.38
18-29	15.83	13.06	13.06	17.17	16.88	16.88		10.58
30-44	28.31	30.25	30.25	30.14	19.82	19.82		4.92
45-64	38.73	37.97	37.97	35.52	25.24	25.24		5.87
65 plus	17.14	18.72	18.72	17.07	15.56	15.56		7.61
Race/Ethnicity								
Asian	3.42	3.15	3.15	4.79	6.34	6.34		7.90
Black	13.00	13.12	13.12	14.75	13.42	13.42		17.69
Hispanic	10.89	11.12	11.12	11.54	20.91	20.91		20.43
Multi/Other	4.61	4.70	4.70	6.36	12.23	12.23		9.98
White	68.07	67.91	67.91	62.56	56.15	56.15		26.98
Yearly Income								
Less Than \$30,000	28.91	26.88	26.88	25.26	22.37	22.37		12.73
\$30,000 - 39,999	12.17	12.46	12.46	11.59	8.27	8.27		4.16
\$40,000 - 49,999	10.06	11.50	11.50	9.82	7.77	7.77		3.61
\$50,000 - 59,999	10.50	9.50	9.50	11.20	7.31	7.31		3.31
\$60,000 - 69,999	6.76	7.34	7.34	6.86	9.57	9.57	\$60,000 - \$74,000	3.73
\$70,000 - 79,999	7.55	8.01	8.01	8.53				
\$80,000 - 89,999	4.61	4.42	4.42	4.49	12.64	12.64	\$75,000 - \$99,000	4.38
\$90,000 - 99,999	4.53	4.26	4.26	5.03				
\$100,000 - 109,999	5.17	5.34	5.34	5.53	9.43	9.43	\$100,000 - \$124,000	4.11
\$110,000 - 119,999	4.45	5.37	5.37	5.18				
More than \$120,000	5.17	4.83	4.83	6.36	22.65	22.65	\$124,000 or more	15.38
NA	0.12	0.10	0.10	0.15				
Monthly Housing Costs								
Less than \$250	17.18	13.66	13.66	14.06	4.98	4.98	Less than \$300	7.36
\$500	15.03	15.06	15.06	11.94	8.45	8.45	\$300 - \$499	7.64
\$750	16.38	15.51	15.51	15.10	26.20	26.20	\$500 - \$999	13.39
\$1,000	18.05	18.46	18.46	16.08	23.71	23.71	\$1,000 - \$1,499	9.19
\$1,500	15.75	16.78	16.78	19.24	15.05	15.05	\$1,500 - \$1,999	8.12
\$2,000	7.95	9.50	9.50	10.36	8.29	8.29	\$2,000 - \$2,499	6.39
\$2,500	3.98	4.42	4.42	5.33	4.72	4.72	\$2,500 - \$2,999	4.86
\$3,000	2.70	3.11	3.11	3.60	6.99	6.99	\$3,000 or more	10.95
\$4,000	1.31	1.53	1.53	1.68				
\$5,000	0.87	0.89	0.89	0.89				
\$7,500	0.28	0.29	0.29	0.39				
\$10,000	0.20	0.19	0.19	0.59				
\$15,000	0.00	0.22	0.22	0.15				
More than \$20,000	0.16	0.25	0.25	0.35				
NA	0.16	0.13	0.13	0.25	1.61	1.61	No cash rent	3.11

Appendix K Descriptive Stats for Constructed Indices

This section provides correlation plots showing relationships among individual items that were aggregated into indices used in the paper.

K.1 Economic Knowledge

On all three surveys, we posed a battery of questions about the effects of supply shocks in non-housing markets (Survey 1 included only 2 of the 4 questions). The question text appears in Table ??.

Figures K.1 and K.2 show bivariate correlations between economic knowledge items and their first principal component, for both the pilot and main surveys. On the pilot survey, the economic knowledge index is basically equivalent to the responses to the free trade question because so many respondents answered the question about cars correctly. We excluded the ideologically loaded free-trade item from the index per our pre-analysis plan and added questions about the price effect of supply shocks in non-housing markets (grain, labor). In the main survey, answers to each of the non-housing supply-shock questions are highly correlated with the index and in the same direction.

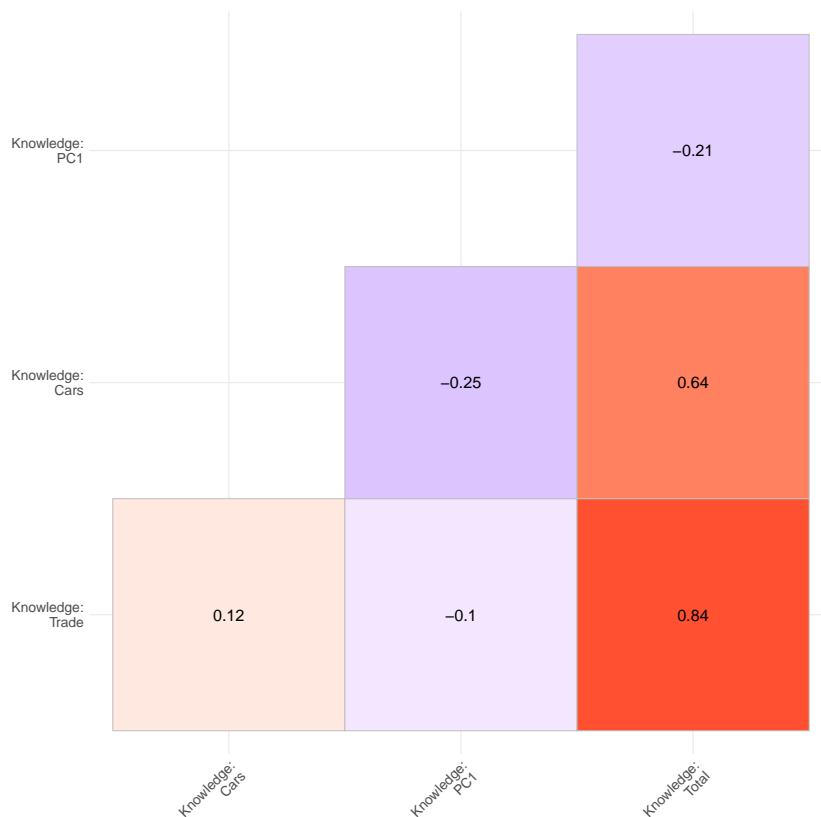


Figure K.1: Correlation matrix of economic knowledge questions and their first principal component. Pilot survey. Because the used-cars question was answered correctly by nearly everyone, the first principal component is substantially equivalent to the answer to the trade question.

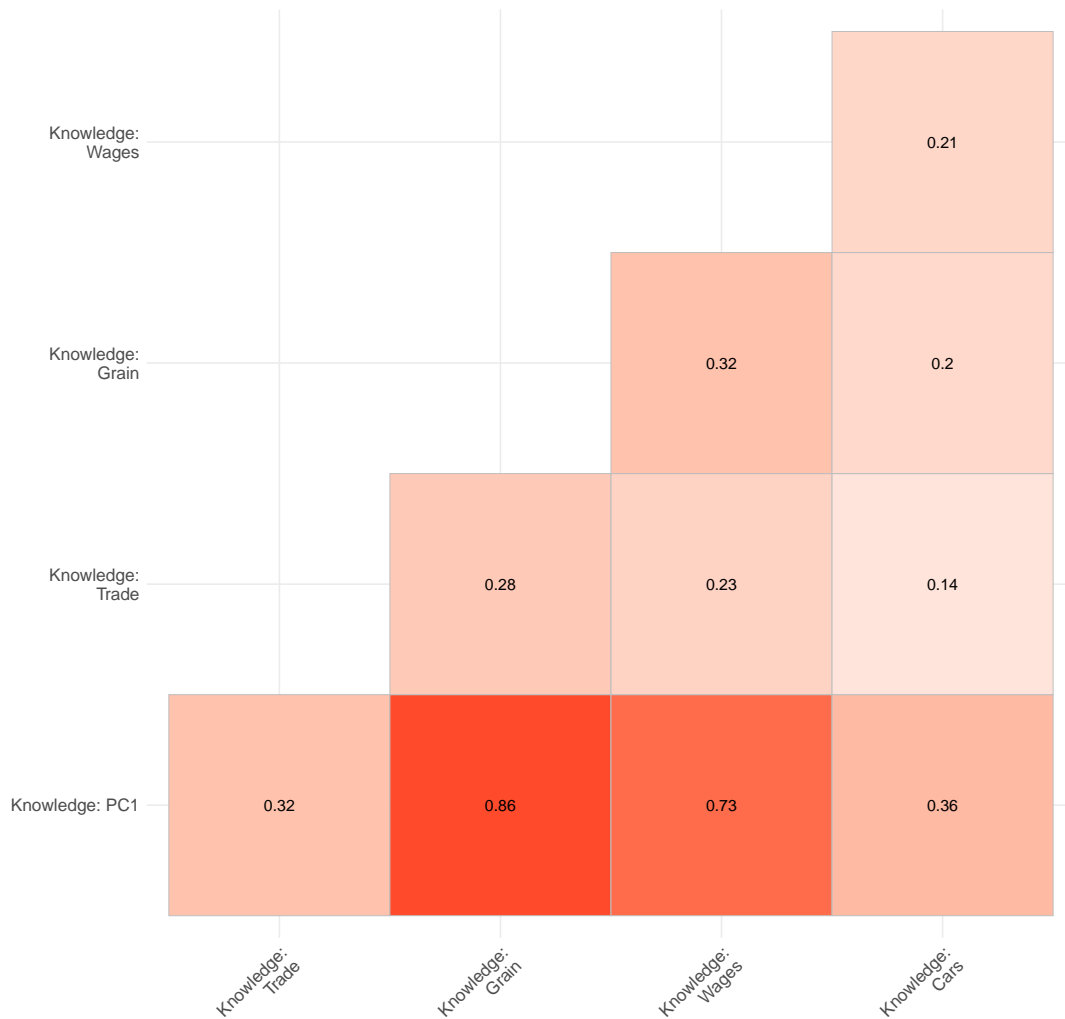


Figure K.2: Correlation matrix of economic knowledge questions and their first principal component. Main survey. Answers to all economic knowledge questions are correlated with the index, as expected. The correlation is strongest for the grain and labor questions. The trade question was not included in the index, per our pre-analysis plan, but answers to it are moderately correlated with the index.

K.2 Zero-Sum Thinking

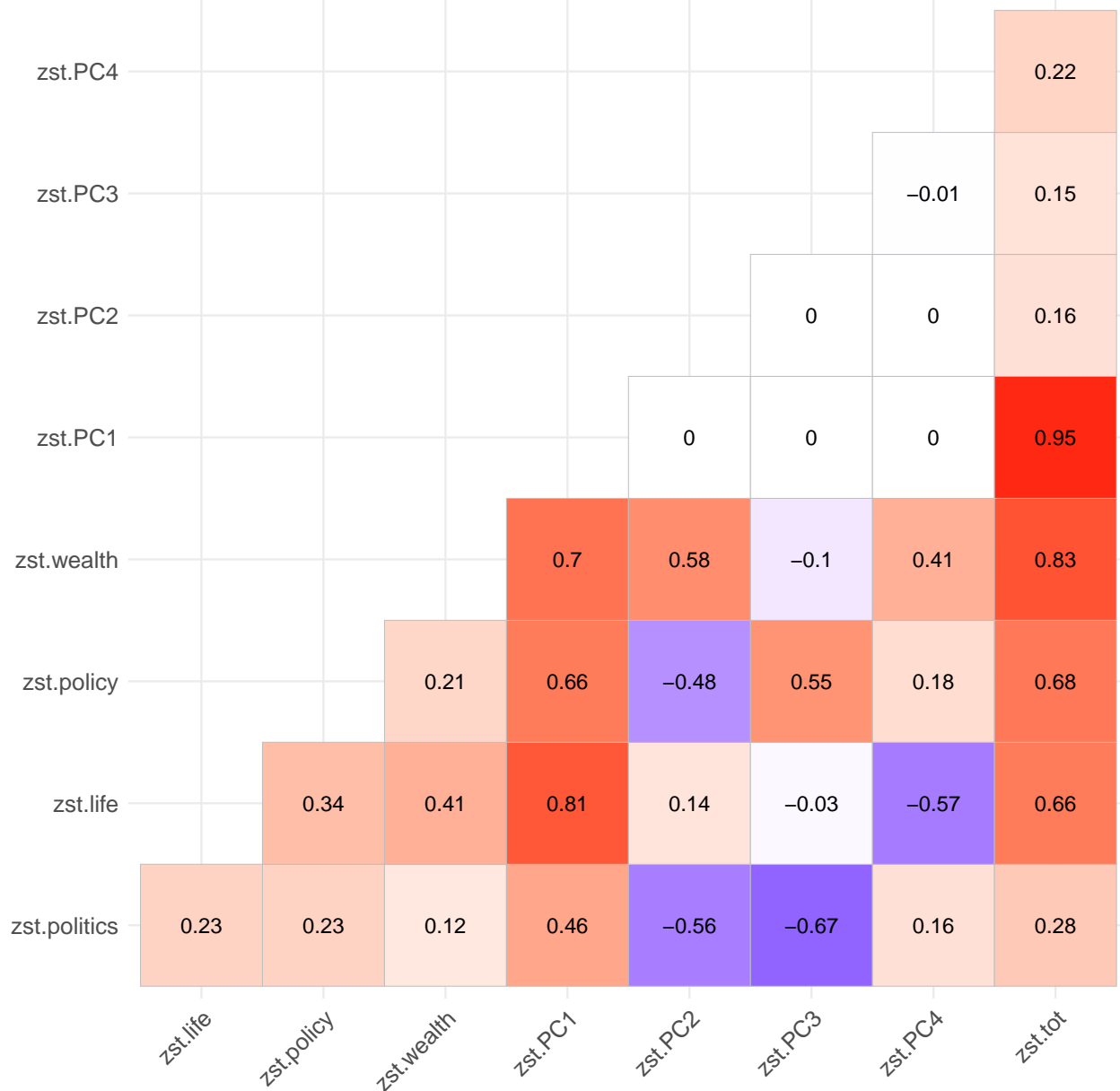


Figure K.3: Correlation matrix for zero-sum thinking questions and their first principal component. Main survey. All items in the index are strongly correlated with the index and in the same direction.

K.3 Subjective Numeracy Scales

In addition to constructing an index of economic literacy based on beliefs about different market scenarios, we attempt to assess the relationship between numeracy and responses to the posited supply shock scenarios. Measurement of numeracy on surveys has been done through objective (asking respondents to answer arithmetic and mathematical reasoning problems) and subjective (asking respondents about their general comfort with numbers) scales. To minimize respondent burden, for Survey 3 we opted to use a subset of seven items from the Subjective Numeracy Scale

(SNS)(Fagerlin et al., 2007):⁴⁴ The questions are shown in Appendix Table 5.

Fagerlin et al. (2007) find that the Subjective Numeracy Scale is almost as predictive of responses to non-scale numerical reasoning questions as the widely accepted objective numeracy scales (Fagerlin et al., 2007, 666), but is less burdensome on respondents. For both the economic literacy and subjective numeracy scales, we calculate the first principal component of the scale item responses.

⁴⁴We omitted one question which asked respondents whether or not they found it easy to calculate a 25% discount.