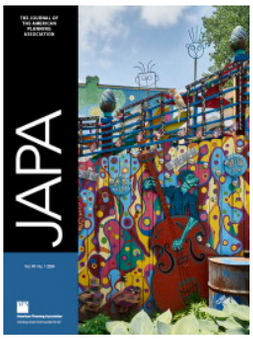

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Evidence from Los Angeles and San Francisco

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Can New Housing Supply Mitigate Displacement and Exclusion?

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ABSTRACT

Problem, research strategy, and findings: The housing affordability crisis is exacerbating displacement and exclusion in built-up urban neighborhoods. Although new housing development might help, it faces local opposition. Researchers have struggled to inform this debate because of data challenges, so we constructed a unique database on construction and household-level mobility to determine how development affects displacement and exclusion in the subsequent 5 years in Los Angeles (a typical coastal "hot market" in California) and San Francisco (the extreme "superstar city" case in California). We found that developing new market-rate housing generally helped slightly to alleviate both displacement and exclusion pressures for low-income households in Los Angeles and helped increase in-migration into weaker market neighborhoods in San Francisco. But particularly in the hottest markets, the new market-rate units could fail to spur low- and moderate-income households' in-migration and exacerbate their out-migration. Likewise, the positive impacts of the new market-rate units may fade over time. Subsidized housing generally mitigated both exclusion and displacement slightly in most markets. Future research should examine long-term effects in a variety of contexts, controlling for the role of housing policies such as rent stabilization.

Takeaway for practice: Market-rate housing development may help alleviate rent pressures locally and regionally, but it is not sufficient to address displacement and exclusion at the neighborhood level. Because new production helps to mitigate displacement and exclusion in some contexts but exacerbates it in others, planners need to understand the market and neighborhood context for development. In addition to supporting more market-rate and subsidized housing development through zoning and fiscal tools, planners should implement complementary policies such as housing preservation and tenant protections.

Keywords: displacement, exclusion, housing development, neighborhood change

A housing affordability crisis is affecting cities, particularly in built-up neighborhoods in the urban core where demand for housing is high but building new units is difficult (Gurran & Bramley, 2017). Across North America, and likely in many other places around the globe, there is clearly an insufficient amount of housing stock to meet need (Parrott & Zandi, 2021). Steady demand from higher-income households has resulted in increasing rents for existing residents, potentially leading to indirect displacement, or increased household out-migration from a neighborhood (Marcuse, 1985). Meanwhile, because low- and moderate-income newcomers are unable to move in, these neighborhoods have become more exclusive and affluent (Fry & Taylor, 2012; Goetz et al., 2019).

However, housing advocates have disagreed about how to address this crisis. Proponents of building more supply have argued that this will alleviate rent pressures in the neighborhood (S. Phillips et al., 2021). Others have opposed the construction of new housing because of the anticipated disruption of the community (Pendall, 1999). For some, new housing threatens neighborhood character, but for others, the key issue is the potential for displacement and exclusion (Been et al., 2019). Regardless, this local opposition has often

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resulted in the delay or cancellation of new construction, thereby exacerbating the housing supply shortage (Manville et al., 2022).

Yet, due primarily to the lack of appropriate data, studies of the impacts of new housing construction have generally focused on changes in housing prices and rents rather than displacement (increased probability of moving out of a neighborhood) and exclusion (decreased probability of moving in) for lower-income households. Moreover, studies rarely examine either how impacts differ across neighborhood types or whether building subsidized housing can help, leaving cities in the dark about where and how to mitigate displacement if it does occur.

In this study, we pinpointed the effects of market-rate housing construction on the probability that low-income households will migrate into or out of different types of neighborhoods, while also examining the role of subsidized housing construction as mitigation. We used the cases of Los Angeles (CA) and San Francisco (CA), cities that have both declared the need for more housing supply and tried to mitigate impacts from displacement. We used a proprietary data set on individual and household characteristics, as well as data on new construction and neighborhood characteristics, to determine how market-rate and subsidized development affected displacement and exclusion after 1 and 5 years by looking at movement both out of and into local neighborhoods in the two cities during the 2010s. We found small effects on probabilities of both in-migration and out-migration, with variation across local market contexts. We concluded that despite the new housing production, socioeconomic factors continued to drive most migration in and out of neighborhoods. This means that to address neighborhood-level displacement and exclusion, planners will need to expand the toolkit beyond production and use anti-displacement tools such as housing preservation and tenant protections, as well as continually address the systemic inequities that lead to housing instability.

We begin with a description of the debates and gaps in the literature to date, showing how the lack of appropriate data has shaped researcher questions and led to spurious conclusions. Next, we explain our case selection, data, and methods for the study. After a brief description of the relationship between market-rate housing production and migration, we present our model results: first, the impacts of production on migration, and then the potential of new subsidized housing construction, often built under inclusionary zoning policies. A conclusion discusses the limitations of this study, how cities might best approach the housing crisis via housing policies, and ideas for further research.

Understanding the Relationship Between Housing Production and Household Mobility: Debates and Gaps

In general, the factors triggering household mobility involve preferences for different housing or neighborhoods or transformative life events (Clark & Dieleman, 1996). To pinpoint the factors behind *involuntary* mobility, the best clues have come from the evictions literature, which has found that poverty, presence of children, job loss, discrimination, and lack of social networks play a role (Desmond & Gershenson, 2017). Evidence about potential vulnerability to displacement has also come from studies of housing precarity, which point to the role of income, race/ethnicity, lack of education, and recent immigration, among other factors (Pendall et al., 2012).

In theory, new housing supply can lead to decreases in both displacement (increased probability of household out-migration) and exclusion (inability to move in). Direct displacement will occur if existing housing units are demolished because of the new construction on the site. But in surrounding blocks, new market-rate buildings will undoubtedly alleviate market pressures by accommodating demand: Newcomers able to pay market rents may move into the new construction rather than attempting to buy or rent existing units in the neighborhood. As a result, the upward pressure on prices and rents should ease, and existing residents should be able to stay in their neighborhoods if they so choose. Affluent neighborhoods that previously excluded new residents may also offer opportunities to move in. If new units are subsidized, low-income residents may have the choice of staying if displaced.

However, there are several situations in which increases in displacement or exclusion could occur. First, newcomers might continue to prefer older housing units, whether because of aesthetics or relatively lower prices or some other reason, thereby continuing to put pressure on the rents of existing stock. Second, the new buildings (and their occupants) could change the character of the neighborhood, inducing new demand for the area (which renews pressure on existing housing stock and rents) because of catalytic or amenity effects, such as the transformation of local services or institutions (Jacobus, 2016). Third, and related, this new demand could transform who is moving into the area, with low-income newcomers unable to find accommodation. Fourth, the construction itself could create negative externalities that disrupt access and quality of life for nearby residents. Finally, in affluent neighborhoods, high demand may mean that both new and existing units continue to be occupied by wealthy newcomers.

Previous studies on market impacts of new housing construction have struggled—largely due to lack of

appropriate data—to describe how dynamics play out in specific neighborhoods and for different population subgroups and housing types. New housing production has helped to moderate housing costs and make housing more affordable to more households, and limited evidence has suggested it may relieve displacement pressures as well (Been et al., 2019). However, little is known about how these impacts are realized at different scales: Although the new housing would undoubtedly alleviate affordability issues at the regional level, considerable uncertainty remains about how the new development would affect a particular neighborhood or block.

To measure the impacts of new infill market-rate construction on the neighborhood, most researchers have examined what happens to housing prices and rents (rather than household mobility per se). Because new construction occurs disproportionately in neighborhoods with rising demand, researchers have devised strategies to deal with endogeneity (e.g., Pennington, 2021). Evidence on local housing price impacts has been quite mixed, with some studies finding that infill development increased prices (Brunes et al., 2020; Ding & Knaap, 2002) but others finding no impacts or decreases (Ahvenniemi et al., 2018; Ding et al., 2000; Wiley, 2009). This variation might be due to the failure to distinguish between different property types and income levels. For example, small infill developments may have more positive impacts on housing prices than large ones do (Nygaard et al., 2022), and price impacts may be heterogeneous across price tiers (Olsen, 2019).

Because rent data are harder to obtain, evidence has been sparse on how new housing production affects local rents. However, three recent studies have indicated that adding new supply slightly decreases rents in the vicinity, excluding the new buildings. Construction of new market-rate buildings in 11 cities across the United States lowered nearby rents by 5% to 7% (Asquith et al., 2023), and a 10% increase in housing supply via high-rise building construction in New York City resulted in 1% decrease in rents within 500 ft (Li, 2022). Likewise, building new market-rate housing in San Francisco reduced rents within a 500-m radius (Pennington, 2021).

Yet, how local rent changes after new construction likely depends on the characteristics of the nearby buildings in terms of proximity, price, and size (Damiano & Frenier, 2020): once again, data on submarkets that researchers rarely have. Even if rents generally decrease, not everyone will benefit: For older buildings catering to low-income renters, new development nearby may raise rents slightly (Damiano & Frenier, 2020).

This evidence thus suggests that new market-rate construction will reduce housing price pressures for at least some residents. But prices and rents are only an indirect indicator of household mobility because some residents choose to stay and pay more for better amenities despite the increased rent burden. How, then, does the new development shape in-migration to and out-migration from a neighborhood and thus patterns of exclusion and displacement?

New housing development spurs household mobility through a process generally called *filtering*: Built at market rate, housing stock declines in quality over time, reducing its cost and thereby becoming accessible to households of moderate income and then low income. Through this process, some exclusive market-rate neighborhoods may begin to spur low-income in-migration in time; presumably the availability of older affordable units reduces out-migration as well.

However, over the short term, and in hotter markets generally, the filtering process—and related in-migration—is not effective. With just 2% of rental units filtering down to lower-income households each year, new units may take many decades to trickle down to the lowest-income households (Rosenthal, 2014). If housing prices are increasing rapidly, affordable housing is scarce, and rental demand high relative to supply, filtering rates will slow, and desirable older units may filter up instead of down (Joint Center for Housing Studies of Harvard University, 2019; Liu et al., 2020; Rosenthal, 2014; Spader, 2024).

On the other hand, increasing evidence has suggested that market-rate housing construction may create migration or vacancy chains that free up housing stock for lower-income households. As higher-income households move from lower-rent housing to new market-rate housing, their previous units become available for lower-income households. This initiates multiple rounds of migration, known as *vacancy chains*, so that both moderate- and low-income households can occupy older housing supply and even in-migrate into higher-income areas (Asquith et al., 2023; Mast, 2021; Myers et al., 2021; Pennington, 2021).

But once again, the studies that have examined migration chains (Asquith et al., 2023; Mast, 2021; Pennington, 2021) suffer from the inability to examine individual household characteristics due to the lack of appropriate data. They have established that residents of low-income neighborhoods (measured by census tracts) are moving up the chain but could not determine whether it is low-, moderate-, or high-income households that are moving in. This *ecological fallacy* problem leaves open the possibility that high-income (rather than low-income) households are moving from low-income gentrifying areas to higher-income neighborhoods. A recent study of migration chains in Helsinki (Finland) overcame this challenge by using individual-level data, showing new market-rate construction was indeed freeing up housing supply for middle- and low-

income individuals (Bratu et al., 2023). However, it is not clear whether this market context—with relatively low income inequality and poverty rates and a strong social safety net—is comparable with North American cities.

Although a few studies (Taylor, 2016; Zuk & Chapple, 2016) have examined the impacts of new housing production on displacement, these also suffer from the ecological fallacy problem. Because they measured displacement by comparing the number of local low-income residents across two time periods, these studies could not determine whether these income changes occurred to existing residents or represent households moving out or in. To determine whether household mobility is involuntary, studies should use surveys that ask reasons for moving, rather than either aggregate census tract data or individual mobility data (Carlson, 2020).

In theory, the production of new market-rate housing should have different effects depending on where it is built; if housing prices and rents have been increasing rapidly (i.e., a hot market), new market-rate housing should help ease the market pressure, facilitating more in-migration and mitigating more out-migration than it would in weak-market neighborhoods. Understanding this dynamic is important for local planners trying to decide where to encourage more construction within the city; however, studies to date have not examined variation in impact across neighborhoods.

Even less is known about how the construction of subsidized housing affects the mobility of low- and moderate-income households (Emmanuel, 2016). Several studies have examined the impacts of subsidized housing construction on the local housing market, finding no or a positive impact on property values and housing prices (An et al., 2023; Ellen et al., 2007; Galster et al., 2004; Pollakowski et al., 2005). However, just one looked at out-migration, finding (in the context of San Francisco) no significant short-term impact on displacement nearby (Pennington, 2021). New construction of subsidized units may crowd out nearby new rental construction in gentrifying areas, complicating these dynamics (Baum-Snow & Marion, 2009).

Thus, our study fills a critical gap in our understanding of the relationship between market-rate housing construction and household mobility by using fine-grained data on both. These data help to identify the experience of low-income residents within the context of particular housing submarkets and neighborhoods.

Empirical Strategy

In this study, we compared outcomes from two cities, Los Angeles and San Francisco, during a 10-year period from 2010 to 2019. Comparing two cities within one state (California) allowed us to control for state policy and planning context. California has long maintained lengthy, stringent, and often litigious environmental review and planning approval processes (O'Neill et al., 2019) and is also known for not-in-my-backyard protests about how new housing construction will disrupt neighborhood character (Monkkonen, 2016). Relative to the rest of the United States, California was a high-growth, strong-market state in the 2010s, but the stories of Los Angeles and San Francisco diverged.

Los Angeles experienced just slightly weaker housing price and rent appreciation (54.1% and 39.1%, respectively) over the decade compared with San Francisco (58.5% and 41.1%, respectively), but median prices and rents have remained significantly lower ($697,200 vs. $1,217,500; $1,554 vs. $1,959), as has income inequality (Rezal, 2022; see also American Community Survey 1-year estimates for 2019). Housing price and rent appreciation at the national level during the same period were substantially lower compared with the two cities (33.6% and 28.3%, respectively), as were median prices and rents ($240,500 and $1,097, respectively). In this period, San Francisco's population grew by 9.5%, exceeding Los Angeles's growth (4.8%). Thus, San Francisco was a slightly stronger market than Los Angeles, which may exacerbate household mobility.

The housing market and policy context across both cities varied slightly. Both cities suffered from relatively low housing production in recent years; total housing stock in Los Angeles increased by just 82,458 units (5.8% growth), while San Francisco increased by 29,686 (7.9% growth) from 2010 to 2020 (decennial census). This growth rate generally lags that of other growing regions, with studies identifying exclusionary zoning and onerous approval processes as key to the deficit in both regions (Gabbe, 2019; Manville et al., 2022; O'Neill et al., 2019). In Los Angeles, 10.9% of the new units were subsidized, versus 23% in San Francisco. Many (30.9%) of the subsidized units in San Francisco were built under its Inclusionary Housing Program; although Los Angeles now has an inclusionary program (the Transit-Oriented Communities Incentive Program), this was implemented after the study period.

Of note, San Francisco is much smaller in population than Los Angeles and comprises just over 10% of the San Francisco Bay Area region (population 7.75 million); Los Angeles is more than 20% of the greater Los Angeles metro (population 18.5 million). At least in theory, this greater housing choice in Los Angeles may shape in- and out-migration patterns.

Using these two cases, we examined two research questions:

- How does new market-rate housing construction affect the out- and in-migration of low- and moderate-income households in different market and neighborhood contexts?

- How does the construction of subsidized housing affect the out- and in-migration of low- and moderate-income households in different market and neighborhood contexts?

Data and Methods

To analyze the relationship between new housing construction and the probability of household in- and out-migration at the neighborhood level, we constructed a data set that included data on housing units built, household characteristics, and neighborhood characteristics (Table 1). By linking these variables, we were able to determine how new residential buildings affected the probability that low- and moderate-income households would move into or out of the local neighborhood, controlling for a variety of socioeconomic and built environment factors. Although we did not know whether moves were voluntary or not, we assessed displacement as increases in probabilities of moving out and exclusion as decreases in probabilities of moving in, inferring that these changes in probability meant migration patterns that differed from the norm. We conducted the analysis at the level of the block group (geographic areas with typically 600 to 3,000 people) to exclude local moves (i.e., within the block group) and also to capture the impacts of newly constructed buildings on adjacent blocks, which might be less noticeable in larger geographies (we excluded block groups that overlapped more than 95% with parks). In-migrants may have arrived at the block group from other neighborhoods, cities, or states; similarly, out-migrants may have moved to other neighborhoods, cities, or states. If a household moved to or from housing units within the block group, we did not count it.

We combined two databases—one for total units and another for subsidized units—to measure how many market-rate and subsidized units were built in a neighborhood each year. Mapping suggested that housing production, both market-rate and subsidized, has historically been concentrated in certain areas (see Technical Appendix A for details).

For household-level data on in- and out-migration, we used the Consumer Reference Dataset (CRD) produced by Data Axle (previously InfoUSA). CRDs are increasingly used in residential mobility studies due to their granularity and comprehensive information related to household characteristics (Diamond et al., 2019; Greenlee, 2019; D. C. Phillips, 2020).[1] Using the household income data provided in the data set, we limited our research data to households that were classified as either low-income (below 80%) or moderate-income (from 80% to 120%) based on the city-level area median income for each year.[2] We subsetted to only renter households of low income for the analysis and included moderate-income renters for a sensitivity analysis.[3] A household was defined as having moved out of a neighborhood (measured by block group) in a given year if it was observed in another neighborhood in a subsequent period; it was defined as having moved into a neighborhood in a given year if the converse was true.[4] Table 1 describes other household variables used in the models (age, household structure, length of residence, and housing type); the observation years are also included in the models as dummies.

We also used the 2017 American Community Survey (ACS) 5-year estimates at the census tract level to measure and control for neighborhood characteristics such as rent, home values, occupancy, building age, race, income, education, and density (Table 1).[5] Last, we also included the 3-year rolling averages of moving in and out rates at the block group level (both owner-occupants and renters, calculated with the Data Axle data set) to account for the historical extent of neighborhood churning (because higher mobility might just reflect a high-turnover neighborhood such as student communities). We used our data on existing subsidized housing units as controls (to pinpoint the impact of the new subsidized units).

We analyzed the relationship between housing production and household mobility using binomial logistic regression models to calculate the probability of a household's binary outcome for moving in and out of a neighborhood. Due to the scarcity of new housing construction, we measured the aggregate impact of 3 years of construction, looking at both short-term (1 year) and long-term (5 years) impacts on household in- and out-migration.[6] We also looked at whether the impacts of market-rate units varied depending on the neighborhood housing market. Using the 2013 ACS 5-year data, we classified census tracts as *affluent* whose median home value and median rent were greater than the city's 70th percentile.[7] We then classified the remaining nonaffluent tracts as *high appreciation* if the 2013 to 2019 growth in either median home values or median rent was greater than 125% of the city-level increase, *stagnant appreciation* if less than 50% relative to city-level increase, and *average appreciation* if otherwise (see Technical Appendix A, Figure 5).[8]

Although this study benefited from a unique data set, many limitations remained, leaving questions for further research. Perhaps most important, we looked only at a short time frame (5 years), but impacts on in- and out-migration may take years to manifest. Without data on the reason for moving, we could not determine whether mobility was voluntary or involuntary. Because we only looked at block groups, we were not able to identify moves at a microscale (e.g., within a building or across the street). We lacked

Table 1. Description of variables.

Variable	Description	Source
Dependent variables		
Move out	1 if the household was observed in another block group in the United States in the next year, 0 if observed in the same block group	Data Axle
Move in	1 if the household was observed in another block group in the United States in the previous year, 0 if observed in the same block group	Data Axle
Construction variables		
Market-rate	Three-year cumulative market-rate units built in a block group added with 1 (in natural log)	ZTRAX/Cal. HCD
Subsidized	Three-year cumulative subsidized units built in a block group added with 1 (in natural log)	California Housing Partnership
100% subsidized	Three-year cumulative subsidized units built in a block group that are not inclusionary units added with 1 (in natural log, San Francisco only)	California Housing Partnership
Inclusionary	Three-year cumulative inclusionary units built in a block group added with 1 (in natural log, San Francisco only)	SF Planning Department
Housing market variables		
Affluent	Census tracts with median home value and median rent greater than the city's 70th percentile in 2013	ACS
Nonaffluent, high appreciation (hot market)	Census tracts that are not affluent with median home value or median rent growth during 2013–2019 greater than 125% of the city-level growth	ACS
Nonaffluent, average appreciation	Census tracts that are not affluent with median home value and median rent growth during 2013–2019 within 50%–125% of the city-level growth	ACS
Nonaffluent, stagnant appreciation	Census tracts that are not affluent with median home value or median rent growth during 2013–2019 50% or less relative to the city-level growth	ACS
Household variables		
Age	Age of the householder in three categories: 34 and below (base), 35–64, 65+	Data Axle
Single-family dwelling unit	1 if the household lives in a single-family dwelling unit, 0 if otherwise	Data Axle
Single	1 if the householder is currently single, 0 if otherwise	Data Axle
Has child	1 if there is a child in the household, 0 if otherwise	Data Axle
Length of residence	Years the household has lived in their current dwelling in natural log	Data Axle
Year	Year the household was observed in the data set (base: 2010)	Data Axle
Neighborhood variables		
Subsidized concentration	Cumulative sum of subsidized units in a given year built since 1990 divided by the total number of occupied units (ACS 2013–2017 5-year data) for the block group	California Housing Partnership/ACS
Median rent	Median gross rent of the census tract (in $1,000)	ACS
Median home value	Median home value of the census tract (in $100,000)	ACS
Vacant units (%)	Share of housing units that are vacant in the census tract	ACS
Owner-occupied units (%)	Share of housing units that are owner occupied in the census tract	ACS
Median year structure built	Median year that the housing structures in the census tract were built	ACS
Non-Hispanic White population (%)	Share of population in the census tract that is non-Hispanic White	ACS
College-educated population (%)	Share of population aged 25 years and older in the census tract that have a bachelor's degree	ACS
Median household income	Median household income of the census tract (in $10,000)	ACS
Population density	Number of populations living per 1,000 km^2 added with 1 (in natural log)	ACS
Move-in rate (%)	Mean average of move-in rates for households at the block group level during the past 3 years	Data Axle
Move-out rate (%)	Mean average of move-out rates for households at the block group level during the past 3 years	Data Axle

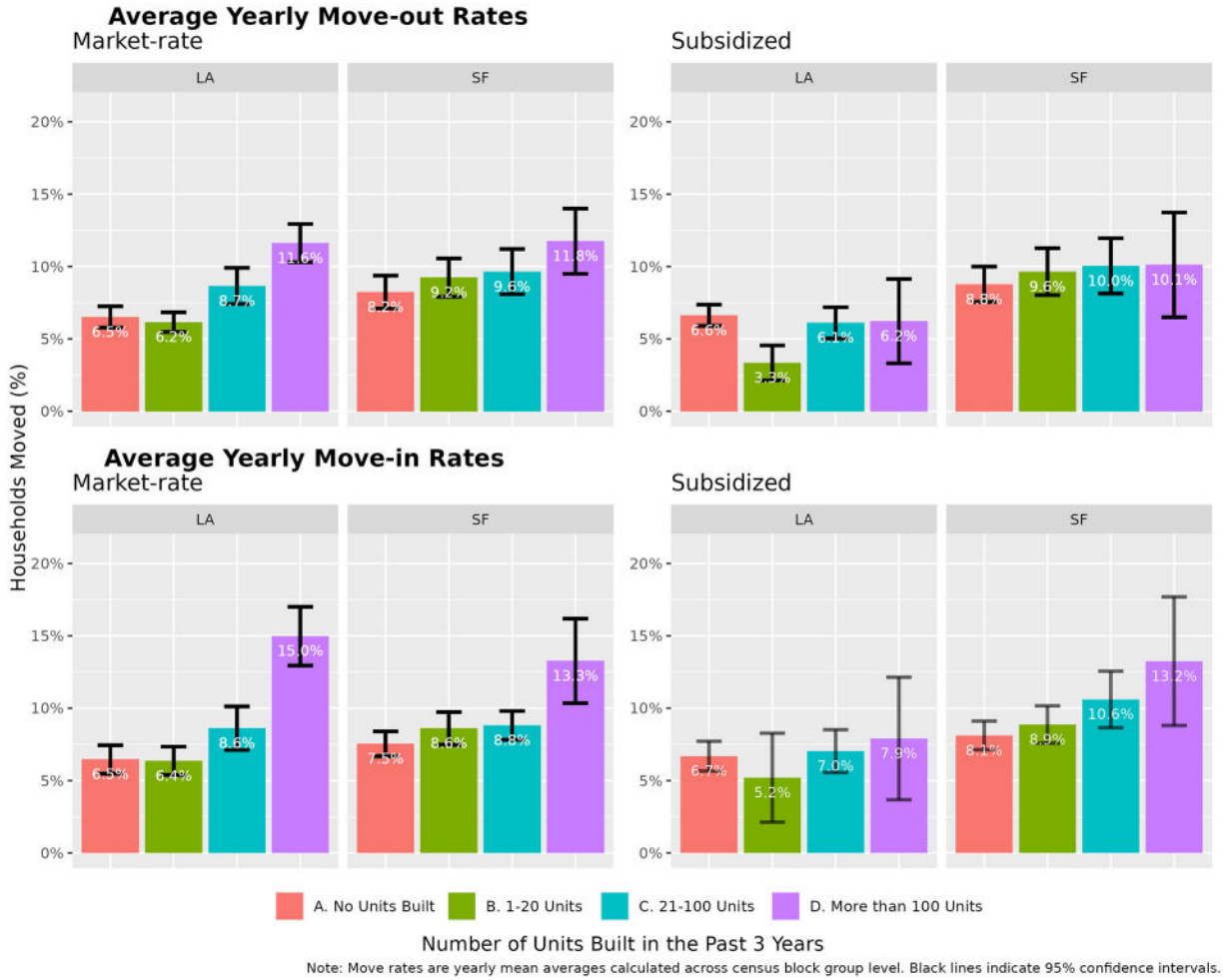

Figure 1. Block group in-migration and out-migration rates for low- and moderate-income households in San Francisco and Los Angeles, 2010–2019 yearly averages.

detailed data on factors such as race and ethnicity, rents, local policies, and built form that would help explain more about why migration rates fluctuated. Although we conducted sensitivity analyses on our categories, it is still possible that definitional changes could alter the results at least slightly. We did not conduct a spatial analysis that might have revealed adjacency impacts. Finally, San Francisco and Los Angeles have remained among the strongest markets in the country, with relative low construction rates, factors that undoubtedly affected the results (by making it hard to detect impacts) and also reduced their generalizability.

Results

In the following sections we first describe the relationship between market-rate housing production and migration in the two cities and then examine the impacts of new production on out- and in-migration, first for market-rate housing and then for subsidized housing.

New Market-Rate Construction Associated with More Churn

Comparing in-migration and out-migration rates across income groups in the two cities, we found several general trends (Figure 1).[9] First, across cities, in block groups with new housing production, churn—both in-migration and out-migration—was higher, with San Francisco generally outpacing Los Angeles. Second, move-in rates exceeded move-out rates significantly only when more than 100 housing units were built in a block group. The differences between move-out rates and move-in rates were slightly higher in San Francisco than in Los Angeles, perhaps reflecting the extreme market pressures in the former city. Third, when fewer than 20 new housing units were built in a given block group, out-migration and in-migration rates were similar to when there was no new production, particularly in Los Angeles. Finally, when subsidized housing was built, move-in rates exceeded move-out rates, except in San Francisco, where this effect occurred only with the construction of more than 20 units.

Table 2. Significant regression impacts on the probability of short- and long-term out-migration overall and by market type for Los Angeles and San Francisco.

		Los Angeles		San Francisco	
Model	**Market**	**Year 1**	**Year 5**	**Year 1**	**Year 5**
Move-out	Overall	0.982		1.138	1.081
	Nonaffluent, stagnant appreciation	**1.033**	**1.076**	**1.148**	**1.197**
	Nonaffluent, average appreciation	(1.033)	1.038	(1.148)	1.047
	Nonaffluent, high appreciation (hot market)	(1.033)	1.005	(1.148)	1.028
	Affluent	0.762	0.745	(1.148)	(1.197)

Note: Bold data represent base effects (in stagnant neighborhoods). When interaction effects between housing construction and average-appreciating, hot market, or affluent neighborhoods were not significant but stagnant neighborhoods were, it means that the effects of construction did not vary based on neighborhood type. This means that there were positive effects on out-migration regardless of neighborhood type for market-rate construction in San Francisco. Hence, the effects of building 100 units in nonaffluent stagnant-appreciation neighborhoods on out-migration (1.033) was expected to have the same impacts in nonaffluent average- and high-appreciation and affluent neighborhoods in Los Angeles. We represent this with parentheses.

We next examined the effect of market-rate construction on out-migration in the neighborhood over the short-term (1 year after construction) and long-term (5 years after construction). For simplicity of presentation, we focused on low-income households but describe in the Notes where effects differed by including moderate-income households. For full regression results, see Technical Appendix B.

New Housing Construction Affected Out-Migration Differently Across Housing Markets

Overall, market-rate construction decreased out-migration from neighborhoods in Los Angeles but increased it in San Francisco, differences likely due to the greater housing market pressure in San Francisco. Table 2 presents the odds ratios: A value greater than 1 describes a positive impact (increase), and a value less than 1 represents a negative impact (decrease). The odds ratio demonstrates the probability of moving in and out of neighborhoods shifted with the construction of 100 units built over a 3-year period, controlling for other variables included in our models (relative to when no new construction occurs).[10] Overall, we found that building 100 market-rate units increased the probability of low-income households moving out of a neighborhood by 0.982 times in Los Angeles and 1.138 times in San Francisco (short-term), with effects decaying over the long term.[11] In other words, if a neighborhood gained 100 new market-rate units, a particular low-income household saw a decreased probability for out-migration of 2% in Los Angeles but an increased probability of 14% in San Francisco of moving out relative to when there was no new construction.

Examining the overall patterns of out-migration in four types of neighborhoods—affluent and nonaffluent high-, average-, and slow-appreciation neighborhoods—we found higher probabilities of out-migration associated with market-rate construction in all neighborhood types except for affluent neighborhoods in Los Angeles. In San Francisco, probabilities of out-migration increased in all neighborhood types over both the short and long terms.[12] Los Angeles's affluent neighborhoods experienced a 24% decrease in the probability of moving out over the short term for 100 new market-rate units built; other neighborhood types saw a modest 3% increase in the probability of moving out in the short term and up to 8% in the long term (for stagnant neighborhoods). However, in San Francisco, new construction increased the probability of out-migration in all neighborhood types in the short term by 15%, with effects decaying in neighborhood types (except stagnant) over the long term.

New Housing Construction Increased In-Migration Across Housing Markets, with Declining Effects over Time

Overall, market-rate construction increased in-migration for both Los Angeles and San Francisco, although the impacts mostly disappeared by year 5 (Table 3). Building 100 market-rate units increased the probability of low-income households moving into a neighborhood by 10% in Los Angeles and 15% in San Francisco (short term). Building in high-appreciation neighborhoods slightly increased the probability of move-ins in the short term but decreased it in the long term.

There was little variation in how new construction shaped in-migration patterns across neighborhood types. For market-rate construction, we found increases in the probability of short-term in-migration across all neighborhood types except for affluent neighborhoods in Los Angeles. However, in-migration decreased in high-appreciation and affluent neighborhoods in both cities over the long term, perhaps reflecting high demand for those markets.[13]

Table 3. Significant regression impacts on the probability of in-migration overall and by market type for Los Angeles and San Francisco.

		Los Angeles		San Francisco	
Model	**Market**	**Year 1**	**Year 5**	**Year 1**	**Year 5**
Move-in	Overall	1.096	0.968	1.153	
	Nonaffluent, stagnant appreciation	**1.122**	**1.038**	**1.117**	**1.208**
	Nonaffluent, average appreciation	(1.122)	(1.038)	(1.117)	
	Nonaffluent, high appreciation (hot market)	1.164	0.982	(1.117)	0.895
	Affluent	0.832	0.839	(1.117)	0.986

Note: Bold data represent base effects (in stagnant neighborhoods). When interaction effects between housing construction and average-appreciating, hot market, or affluent neighborhoods were not significant but stagnant neighborhoods were, it means that the effects of construction did not vary based on neighborhood type. This means that there were positive effects on in-migration regardless of neighborhood type for market-rate construction in San Francisco. Hence, the effects of building 100 units in nonaffluent stagnant-appreciation neighborhoods on out-migration (1.117) were expected to have the same impacts in nonaffluent average-appreciation, high-appreciation, and affluent neighborhoods for San Francisco. We represent this with parentheses.

Table 4. Significant regression impacts on the probability of short- and long-term out- and in-migration with the construction of subsidized housing overall and by market type for Los Angeles and San Francisco.

		Los Angeles		San Francisco	
Model	**Market**	**Year 1**	**Year 5**	**Year 1**	**Year 5**
Move-out	Overall	0.955	0.968		
	Nonaffluent, stagnant appreciation	**0.946**	**0.908**	**0.836**	
	Nonaffluent, average appreciation	(0.946)	(0.908)	1.096	
	Nonaffluent, high appreciation (hot market)	1.047	0.977	(0.836)	
	Affluent	(0.946)	(0.908)	(0.836)	
Move-in	Overall	1.225		1.117	1.112
	Nonaffluent, stagnant appreciation	**1.186**	**1.042**		**0.900**
	Nonaffluent, average appreciation	(1.186)	0.946	1.259	1.086
	Nonaffluent, high appreciation (hot market)	1.276	0.968	1.186	1.312
	Affluent[a]	2.594	0.573		0.900

Notes: Bold data represent base effects (in stagnant neighborhoods). When interaction effects between housing construction and average-appreciating, hot market, or affluent neighborhoods were not significant but stagnant neighborhoods were, it means that the effects of construction did not vary based on neighborhood type. This means that there were positive effects on in-migration regardless of neighborhood type for market-rate construction in San Francisco. Hence, the effects of building 100 subsidized units in nonaffluent stagnant-appreciation neighborhoods on out-migration (0.946) was expected to have the same impacts in nonaffluent average-appreciation and affluent neighborhoods for Los Angeles. We represent this with parentheses. a. The low sample size of subsidized units in affluent neighborhoods in Los Angeles (an average of 0.298 units per block group) likely made this result unreliable.

Subsidized Housing Worked to Reduce Out-Migration and Increase In-Migration in Most Contexts

Production of subsidized housing units was effective in reducing out-migration in both Los Angeles (short and long terms) and San Francisco (short term only). In Los Angeles, the probability of moving out decreased by 5% in the short term and 3% in the long term, with few differences across neighborhood types except in high-appreciation neighborhoods, where out-migration increased (at least in the short term). In San Francisco, the probability of out-migration decreased by 16% in the short term, with no significant impacts in the long term. The exception, where the probability of out-migration increased, was average-appreciation areas (Table 4).[14]

Subsidized units generally increased the likelihood of short-term in-migration across different neighborhood types in both Los Angeles and San Francisco. However, in-migration decreased over the long term in average-appreciation, high-appreciation, and affluent neighborhoods in Los Angeles and stagnant-appreciation and affluent neighborhoods in San Francisco.

Table 5. Significant regression impacts on the probability of short- and long-term out- and in-migration with the construction of market-rate, inclusionary, and subsidized housing for San Francisco.

		San Francisco	
Model	**Market**	**Year 1**	**Year 5**
Move-out	Market-rate	1.096	1.062
	Subsidized (100%)	0.955	0.959
	Inclusionary	1.107	
Move-in	Market-rate	1.096	1.042
	Subsidized (100%)	1.057	1.067
	Inclusionary	1.247	

Onsite Inclusionary Housing Increased Low-Income In-Migration, Whereas 100% Subsidized Housing Also Stemmed Low-Income Out-Migration

We also examined separately the effects of onsite inclusionary and 100% subsidized housing in San Francisco, finding that the inclusionary units increased the probability of short-term out-migration (by 11%), whereas the 100% subsidized reduced it over both the short and long terms (by 4%). This may be related to the fact that the inclusionary units were in majority market-rate buildings. However, inclusionary housing resulted in substantial (25%) increases in short-term in-migration, whereas impacts of 100% subsidized housing were much lower (6% in the short term and 7% in the long term; Table 5).[15]

Discussion

Our analysis shows that new market-rate housing production had minor impacts on the probability of migration of low- and moderate-income households (typically altering probabilities of a move in a range from 2% to 15%) and varying impacts on the probability of migration based on different markets (Los Angeles versus San Francisco) and neighborhoods (affluent and high appreciation versus average and stagnant appreciation). In most contexts, new subsidized housing construction worked as partial mitigation by reducing the probability of out-migration and increasing in-migration. Substantial impacts will not emerge unless a significant number of units are built; for example, apartment buildings with a total of at least 100 units within a block group. Sensitivity analysis suggested that impacts will sometimes differ in certain neighborhood types when moderate-income households are included in the analysis.

In the following, we first discuss findings for market-rate housing production in different markets and then neighborhood types. We then turn to the impacts of subsidized housing construction, both 100% and inclusionary.

New Market-Rate Construction Reduced Out-Migration Only in Weaker Markets but Generally Increased In-Migration in All Markets

In Los Angeles, which was a weaker housing market than San Francisco in terms of growth and price pressures, new market-rate construction in the neighborhood (more than 100 units) affected move-in rates more than move-out rates for low-income households. All things equal, however, the new construction slightly decreased out-migration. It also increased in-migration, though these impacts may decrease over time.

San Francisco experienced higher move-out rates than move-in, and though the new construction increased in-migration, it also increased out-migration. We attribute these differences to the housing market pressure in San Francisco. With higher housing prices and rents, higher price appreciation, population growth, and inequality, new market-rate construction was not as successful at stabilizing communities and overcoming exclusion.

New Market-Rate Construction Mitigated Market Pressures Only in Certain Neighborhood Types

Neighborhoods also varied in market pressure; high-appreciation neighborhoods often experienced heightened out-migration, and affluent neighborhoods experienced decreased in-migration. New market-rate construction worked best to mitigate displacement in affluent neighborhoods in Los Angeles, where it decreased the probability of low-income out-migration by 24%; it was most effective at mitigating exclusion in stagnant-appreciation neighborhoods in San Francisco (21% increased probability of in-migration). However, it also resulted in increased probabilities of out-migration in the same neighborhoods, suggesting that these may be vulnerable to gentrification in the future.

Factors Other than Market-Rate Housing Production Affected Displacement and Exclusion

If impacts were minor, what then accounted for household mobility into and out of neighborhoods? Our models (see standardized coefficients in Technical Appendix B) confirmed previous studies of housing mobility and

precarity by suggesting that other factors were highly significant in facilitating in- and out-migration. Specifically, age, marital status or presence of children, and previous neighborhood churn or length of residence were the most significant variables associated with both in- and out-migration in the two cities' neighborhoods.

New Subsidized Construction Generally Increased In-Migration and Stemmed Out-Migration in Some Neighborhood Types

We expected new subsidized housing in the neighborhood to stem out-migration because it would ease pressure on the market and offer more housing choices for low-income households that sought to stay. However, subsidized housing's impacts on out-migration varied depending on the market type. It did work to stem out-migration in Los Angeles, except for high-appreciation neighborhoods. Yet, in San Francisco, the new housing reduced out-migration in stagnant and the other neighborhood types but increased the probability of out-migration in average-appreciation neighborhoods. These mixed impacts may have been due in part to how San Francisco distributed subsidized units via a citywide lottery, rather than prioritizing residents. The differences may also have resulted from the uneven distribution of subsidized housing (which makes it difficult to study in more affluent neighborhoods) and could also reflect the catalytic impact of new development in a neighborhood, increasing local rents.[16] Although further research is needed to determine why, one potential reason that new subsidized housing did not always mitigate displacement is that it may be replacing existing affordable housing stock.

New subsidized housing increased the probability of in-migration of low-income households, although impacts almost all decayed over time. Of note, the very low sample size of subsidized housing in affluent neighborhoods made its impact on in-migration hard to analyze. The generally positive impact of subsidized housing is not surprising, because the new units make it possible for households to move in even when markets are tight.

Separating onsite inclusionary housing from 100% subsidized housing (only possible in the San Francisco case) helped to clarify these effects. Both were associated with increases in in-migration, with a 25% increase in probability associated with inclusionary housing. However, new inclusionary housing increased the probability of out-migration in the short term, whereas new 100% subsidized housing decreased it, at least in the long term. This suggests that if catalytic changes were occurring, it was via onsite inclusionary rather than purely subsidized development.

Conclusion

Previous research has found that new market-rate production can help to ease rent pressures slightly in a neighborhood, but can it mitigate displacement and exclusion? Using a unique household-level data set, we found that developing at least 100 units of new market-rate housing in a neighborhood helped slightly to alleviate both displacement and exclusion pressures for low-income households in Los Angeles and helped increase low-income in-migration into weaker-market neighborhoods in San Francisco. But in the high-demand San Francisco housing market, or even certain neighborhoods within the weaker Los Angeles market, the new market-rate units may fail to spur in-migration and exacerbate out-migration. Likewise, the new market-rate units may be insufficient to overcome exclusion over the long term, particularly in hotter markets. However, new subsidized housing development helped to alleviate displacement and exclusion in most markets.

These minor impacts remind us that when displacement and exclusion occur, it is primarily due to underlying housing and household socioeconomic characteristics, not new construction per se, which (unless it involves demolition and direct displacement) has relatively minor impacts on the probabilities of moving. Although market-rate housing development will undoubtedly help alleviate the housing affordability crisis at the city or regional level, it will not address displacement or exclusion in all the neighborhoods where it occurs. Mitigating these issues requires not just additional policy and planning tools but interventions at the state and federal levels that remedy structural inequities of race, gender, and income.

Developers are most keen to build in neighborhoods with the greatest return, which are also the city's hottest markets. Our results indicated that this will help mitigate displacement and exclusion in such areas in Los Angeles but likely not San Francisco. This suggests that neighborhoods generally benefit from new construction; the exception is superstar cities with global demand for their real estate. Further research is needed to determine the combination of policy interventions that will help to stabilize communities in North America's hottest markets.

Planners and policymakers are eager to reverse housing segregation by opening low-density and/or affluent neighborhoods to low-income households, such as per the federal government's Affirmatively Furthering Fair Housing rule (Steil et al., 2021). Our results showed that new market-rate housing worked well to decrease out-migration of low-income

households in affluent neighborhoods in Los Angeles but failed in San Francisco and did not alleviate exclusion in either city's affluent enclaves. There may simply not be enough construction relative to the demand for housing in these neighborhoods. Future research should investigate whether inclusionary or 100% subsidized housing (or some other form of subsidized housing) is most appropriate to achieve these goals in affluent areas.

New subsidized housing development helped slightly more than market-rate construction to alleviate displacement and exclusion. However, further research is needed to understand why, in some cases, new subsidized units increased rather than decreased out-migration. If, as we hypothesize, these new developments are increasing out-migration because of their catalytic effect on the neighborhood, this suggests that the preservation of affordable housing might be a more effective way to stabilize the neighborhood (Howell et al., 2019). Given the minor differences in effectiveness at mitigating displacement between market-rate and subsidized housing, planners and policymakers will also want to evaluate carefully whether market-rate or subsidized housing will be more cost-effective in their context.

That new housing construction has mixed impacts on displacement and exclusion does not mean that we should not build. Substantial impacts materialize only at more than 100 units, so small-scale development, such as midsize apartment buildings, is not likely to have negative impacts. Planners need to ensure that both market-rate and subsidized housing construction occurs regularly across all types of neighborhoods but particularly in exclusive areas. Yet, because new production, even subsidized, is insufficient to prevent displacement and exclusion—and sometimes has inconsistent impacts as well—other, complementary actions are necessary. This is particularly important in high-demand cities, as the San Francisco case shows. Achieving goals of neighborhood stability and integration calls for policies, programs, and resources at the state and federal levels that mitigate poverty and inequality. But local planners can also support the implementation of local measures to preserve affordable housing units and protect tenants (Chapple et al., 2023). Indeed, such policies, which our study did not measure, may be working in concert with housing production in the Los Angeles and San Francisco cases studied.

This research examined two housing markets experiencing growth pressures, albeit at different levels, within the context of California, where there are many constraints on producing new housing supply. Many of North America's economically dynamic and stronger market cities, especially those in coastal regions, are in similarly constrained contexts and thus likely experience similar effects on displacement and exclusion when new construction occurs. However, given the variation found across neighborhoods in this study, as well as its relatively short time frame (5 years), future research should validate our findings in other contexts and explore impacts over longer time frames. One finding worthy of more exploration is that stagnant neighborhoods, or neighborhoods below median income with housing price appreciation below the 70th percentile, did experience increased out-migration with new construction across time periods in both cities.

Our research examined the impacts of construction in 3 years on mobility to and from a block group in subsequent years but did not control for the potential cumulative impacts of construction in subsequent years. Further, because tenants may be slow to move, research should also continue to examine how market-rate construction affects not just mobility but also rents, with analysis of different types of buildings (Damiano & Frenier, 2020). Likewise, future research should help identify specific contextual factors that shape how new construction lands in specific types of neighborhoods. Our findings were affected by both the low levels and the uneven spatial distribution of production; as more construction occurs, future research might be able to identify more significant impacts.

Finally, research should explore which types of antidisplacement policies are most effective in conjunction with new market-rate housing development in particular neighborhood contexts and in which order they need to be implemented to stabilize communities. Previous research has found that rent stabilization and just cause policies may help to mitigate displacement but may exacerbate exclusion (Hwang et al., 2022). The findings of our study about the impacts of new construction on displacement and exclusion hint that in combination, these approaches could work as a powerful tool to stabilize and integrate neighborhoods.

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No potential conflict of interest was reported by the authors.

SUPPLEMENTAL MATERIAL

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NOTES

1. Infutor Data Solutions and Data Axle are the two most widely used CRD sources in studying residential mobility. For this study, we validated both, finding that Data Axle data was better suited for studying residential mobility. Data Axle CRD has a panel structure with an observation for households in each year; Infutor CRD has a longitudinal location data set that needs to be combined with a separate demographic data set collected from a fixed point in time. Data Axle CRD also matched more closely with the census tract–level population counts compared with Infutor CRD. Researchers have also validated the Data Axle household data using Federal Reserve Bank of New York Consumer Credit Panel/Equifax Data, finding similar (though not identical) results (Chapple et al., 2022).

2. Area median income calculations are based on American Community Survey data. As of 2019, Los Angeles had a median household income of $67,418, 38.4% of households earned below $50,000, and 27.1% earned between $50,000 and $75,000. San Francisco had a median household income of $123,859, 30.3% of households earned below $75,000, and 23.5% earned between $75,000 and $150,000.

3. We treated each household–year combination in the data set as an individual observation so that we could estimate the impacts of construction each year on the probability of in- and out-migration of the household both immediately (1 year) and in the longer run (5 years). Although some mobility studies reduced CRDs so that each household corresponded to one observation (Greenlee, 2019), these studies focused on long-term neighborhood patterns.

4. We used data from 2009 to flag which neighborhoods households that moved in 2010 were moving from, but we did not consider data from 2020 for households moving out in 2019 due to the disruptive effects of COVID-19.

5. We used tract-level data here because the large margins of error rendered block group–level data unreliable.

6. We did not control for housing construction during the 5-year period after the 3 years of production measured. So 5-year (long-term) impacts may reflect the construction of additional housing units.

7. We also conducted a sensitivity analysis with an 80th percentile threshold for affluent neighborhoods, finding similar results across our models. However, we chose the 70% threshold because no subsidized units were built in affluent neighborhoods in either city.

8. Analysis with the housing market variable excluded neighborhood variables other than vacant units, owner-occupied units, population density, and the rolling migration rates to avoid endogeneity, or double-counting socioeconomic characteristics.

9. We found a range of average yearly migration rates from 6% to 15%. Of note, using different methods and data, others have found a slightly higher range, from 6% to 18%, with lower-income groups typically ranging from 12% to 18% (Chapple et al., 2022).

10. Because the construction variables are logarithmically transformed, we calculated impacts by calculating the odds ratio of each unstandardized coefficient multiplied by (=4.605): exp (unstandardized coefficient * $\log_e$100).

11. A sensitivity analysis on the impacts of 200 units revealed impacts that were slightly higher but in the same direction.

12. Adding moderate-income households yielded different effects in a few instances, decreasing out-migration in affluent neighborhoods (short-term) and nonaffluent high-appreciation neighborhoods (long-term) in San Francisco.

13. Adding moderate-income households also resulted in decreased probabilities of moving in for average-appreciation neighborhoods in Los Angeles (over the long term) and affluent neighborhoods over the short term in San Francisco.

14. Of note, when including moderate-income groups, subsidized housing increased the probability of moving out in all neighborhood types except for stagnant neighborhoods in both Los Angeles and San Francisco over the short and long terms.

15. When we included moderate-income households, the effects of 100% subsidized housing on in-migration were no longer significant.

16. Interestingly, adding moderate-income households increased the significance of certain effects, though it did not change the direction of any of the impacts. This suggested that low sample sizes of subsidized housing may indeed be playing a role.

REFERENCES

Ahvenniemi, H., Pennanen, K., Knuuti, A., Arvola, A., & Viitanen, K. (2018). Impact of infill development on prices of existing apartments in Finnish urban neighbourhoods. *International Journal of Strategic Property Management*, *22*(3), 157–167. https://doi.org/10.3846/ijspm.2018.1540

An, B., Jakabovics, A., Liu, J., Orlando, A. W., Rodnyansky, S., Voith, R., Zielenbach, S., & Bostic, R. W. (2023). Factors affecting spillover impacts of LIHTC developments: An analysis of Los Angeles. *Cityscape: A Journal of Policy Development and Research*, *25*(2), 309–364.

Asquith, B. J., Mast, E., & Reed, D. (2023). Local effects of large new apartment buildings in low-income areas. *The Review of Economics and Statistics*, *105*(2), 359–375. https://doi.org/10.1162/rest_a_01055

Baum-Snow, N., & Marion, J. (2009). The effects of low income housing tax credit developments on neighborhoods. *Journal of Public Economics*, *93*(5-6), 654–666. https://doi.org/10.1016/j.jpubeco.2009.01.001

Been, V., Ellen, I. G., & O'Regan, K. (2019). Supply skepticism: Housing supply and affordability. *Housing Policy Debate*, *29*(1), 25–40. https://doi.org/10.1080/10511482.2018.1476899

Bratu, C., Harjunen, O., & Saarimaa, T. (2023). JUE insight: City-wide effects of new housing supply: Evidence from moving

chains. *Journal of Urban Economics*, *133*, 103528. https://doi.org/10.1016/j.jue.2022.103528
Brunes, F., Hermansson, C., Song, H.-S., & Wilhelmsson, M. (2020). NIMBYs for the rich and YIMBYs for the poor: Analyzing the property price effects of infill development. *Journal of European Real Estate Research*, *13*(1), 55–81. https://doi.org/10.1108/JERER-11-2019-0042
Carlson, H. J. (2020). Measuring displacement: Assessing proxies for involuntary residential mobility. *City & Community*, *19*(3), 573–592. https://doi.org/10.1111/cico.12482
Chapple, K., Hwang, J., Jeon, J. S., Zhang, I., Greenberg, J., & Shrimali, B. (2022). *Housing market interventions and residential mobility in the San Francisco Bay area*. Federal Reserve Bank of San Francisco, Community Development Working Paper Series, 01–179. https://doi.org/10.24148/cdwp2022-01
Chapple, K., Loukaitou-Sideris, A., Miller, A., & Zeger, C. (2023). The role of local housing policies in preventing displacement: A literature review. *Journal of Planning Literature*, *38*(2), 200–214. https://doi.org/10.1177/08854122221137859
Clark, W. A. V., & Dieleman, F. M. (1996). *Households and housing: Choice and outcomes in the housing market*. Transaction Publishers.
Damiano, A., & Frenier, C. (2020). *Build baby build? Housing submarkets and the effects of new construction on existing rents* (Center for Urban and Regional Affairs Working Paper). University of Minnesota. https://www.cura.umn.edu/research/build-baby-build-housing-submarkets-and-effects-new-construction-existing-rents
Desmond, M., & Gershenson, C. (2017). Who gets evicted? Assessing individual, neighborhood, and network factors. *Social Science Research*, *62*, 362–377. https://doi.org/10.1016/j.ssresearch.2016.08.01
Diamond, R., McQuade, T., & Qian, F. (2019). The effects of rent control expansion on tenants, landlords, and inequality: Evidence from San Francisco. *American Economic Review*, *109*(9), 3365–3394. https://doi.org/10.1257/aer.20181289
Ding, C., & Knaap, G.-J. (2002). Property values in inner-city neighborhoods: The effects of homeownership, housing investment, and economic development. *Housing Policy Debate*, *13*(4), 701–727. https://doi.org/10.1080/10511482.2002.9521462
Ding, C., Simons, R., & Baku, E. (2000). The effect of residential investment on nearby property values: Evidence from Cleveland, Ohio. *Journal of Real Estate Research*, *19*(1), 23–48. https://doi.org/10.1080/10835547.2000.12091011
Ellen, I. G., Schwartz, A. E., Voicu, I., & Schill, M. H. (2007). Does federally subsidized rental housing depress neighborhood property values? *Journal of Policy Analysis and Management*, *26*(2), 257–280. https://doi.org/10.1002/pam.20247
Emmanuel, D. (2016, May 18). The upshot of focusing on extremely low income renters: Expanded housing availability for all renters. National Low Income Housing Coalition. https://hfront.org/2016/05/18/the-upshot-of-focusing-on-extremely-low-income-renters-expanded-housing-availability-for-all-renters/
Fry, R. A., & Taylor, P. (2012). *The rise of residential segregation by income*. Pew Research Center.
Gabbe, C. J. (2019). Changing residential land use regulations to address high housing prices: Evidence from Los Angeles. *Journal of the American Planning Association*, *85*(2), 152–168. https://doi.org/10.1080/01944363.2018.1559078
Galster, G., Tatian, P., & Pettit, K. (2004). Supportive housing and neighborhood property value externalities. *Land Economics*, *80*(1), 33–54. https://doi.org/10.2307/3147143
Goetz, E. G., Damiano, A., & Williams, R. A. (2019). Racially concentrated areas of affluence. *Cityscape*, *21*(1), 99–124. https://www.jstor.org/stable/26608013
Greenlee, A. J. (2019). Assessing the intersection of neighborhood change and residential mobility pathways for the Chicago Metropolitan Area (2006–2015). *Housing Policy Debate*, *29*(1), 186–212. https://doi.org/10.1080/10511482.2018.1476898
Gurran, N., & Bramley, G. (2017). *Urban planning and renewal*. Palgrave Macmillan. https://doi.org/10.1057/978-1-137-46403-3
Howell, K. L., Mueller, E. J., & Wilson, B. B. (2019). One size fits none: Local context and planning for the preservation of affordable housing. *Housing Policy Debate*, *29*(1), 148–165. https://doi.org/10.1080/10511482.2018.1476896
Hwang, J., Zhang, I., Jeon, J. S., Chapple, K., Greenberg, J., & Shrimali, B. (2022), April. *Who benefits from tenant protections? The effects of rent stabilization and just cause for evictions on residential mobility in the Bay Area*. UC Berkeley Urban Displacement Project.
Jacobus, R. (2016). *Why we must build. Shelterforce*. National Housing Institute.
Joint Center for Housing Studies of Harvard University. (2019). *The state of the nation's housing 2019*. Joint Center for Housing Studies.
Li, X. (2022). Do new housing units in your backyard raise your rents? *Journal of Economic Geography*, *22*(6), 1309–1352. https://doi.org/10.1093/jeg/lbab034
Liu, L., McManus, D. A., & Yannopoulos, E. (2020). *Geographic and temporal variation in housing filtering rates* (SSRN Scholarly Paper No. ID 3527800). *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3527800
Manville, M., Monkkonen, P., Gray, N., & Phillips, S. (2022). Does discretion delay development? The impact of approval pathways on multifamily housing's time to permit. *Journal of the American Planning Association*, *89*(3), 336–347. https://doi.org/10.1080/01944363.2022.2106291
Marcuse, P. (1985). Gentrification, abandonment, and displacement: Connections, causes, and policy responses in New York City. *Washington University Journal of Urban and Contemporary Law*, *28*, 195–240.
Mast, E. (2021). JUE Insight: The effect of new market-rate housing construction on the low-income housing market. *Journal of Urban Economics*, *133*, 103383. https://doi.org/10.1016/j.jue.2021.103383
Monkkonen, P. (2016). *Understanding and challenging opposition to housing construction in California's urban areas* (Housing Lectureship and Development White Paper). *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3459823
Myers, D., Park, J., & Cho, S. (2021). Housing shortages and the new downturn of residential mobility in the US. *Housing Studies*, *38*(6), 1088–1109. https://doi.org/10.1080/02673037.2021.1929860
Nygaard, C. A., Galster, G., & Glackin, S. (2022). The size and spatial extent of neighborhood price impacts of infill development: Scale matters? *The Journal of Real Estate Finance and Economics*. Advance online publication. https://doi.org/10.1007/s11146-022-09916-x
Olsen, A. K. (2019). *Cities, growth and housing: Essays on urban political economy* [Unpublished PhD dissertation]. University of California, Berkeley.
O'Neill, M., Gualco-Nelson, G., & Biber, E. (2019). *Examining the local land use entitlement process in California to inform*

policy and process (Working Paper No. 2). Center for Law, Energy & the Environment.
Parrott, J., & Zandi, M. (2021). *Overcoming the nation's daunting housing supply shortage*. Urban Institute.
Pendall, R. (1999). Opposition to housing: NIMBY and beyond. *Urban Affairs Review*, *35*(1), 112–136. https://doi.org/10.1177/10780879922184310
Pendall, R., Theodos, B., & Franks, K. (2012). Vulnerable people, precarious housing, and regional resilience: An exploratory analysis. *Housing Policy Debate*, *22*(2), 271–296. https://doi.org/10.1080/10511482.2011.648208
Pennington, K. (2021). Does building new housing cause displacement? The supply and demand effects of construction in San Francisco. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3867764
Phillips, D. C. (2020). Measuring housing stability with consumer reference data. *Demography*, *57*(4), 1323–1344. https://doi.org/10.1007/s13524-020-00893-5
Phillips, S., Manville, M., & Lens, M. (2021). *Research roundup: The effect of market-rate development on neighborhood rents*. UCLA Lewis Center for Regional Policy Studies.
Pollakowski, H. O., Ritchay, D., & Weinrobe, Z. (2005). *Effects of mixed-income, multi-family rental housing developments on single-family housing values*. MIT Center for Real Estate.
Rezal, A. (2022, September 25). Even the richest San Franciscans think economic inequality is out of control. Here's how bad it is. *San Francisco Chronicle*. https://www.sfchronicle.com/sf/article/income-inequality-San-Francisco-17462495.php
Rosenthal, S. S. (2014). Are private markets and filtering a viable source of low-income housing? Estimates from a "repeat income" model. *American Economic Review*, *104*(2), 687–706. https://doi.org/10.1257/aer.104.2.687
Spader, J. (2024). Has housing filtering stalled? Heterogeneous outcomes in the American Housing Survey, 1985–2021. *Housing Policy Debate*. Advance online publication. https://doi.org/10.1080/10511482.2023.2298256
Steil, J., Kelly, N., Vale, L., & Woluchem, M. (2021). *Furthering fair housing: Prospects for racial justice in America's neighborhoods*. Temple University Press.
Taylor, M. (2016). *Perspectives on helping low-income Californians afford housing*. California Legislative Office.
Wiley, K. (2009). *An exploration of the impact of infill on neighborhood property values* [Unpublished doctoral dissertation]. University of Maryland-Baltimore.
Zuk, M., & Chapple, K. (2016). *Housing production, filtering and displacement: Untangling the relationships*. Berkeley Institute of Governmental Studies.