

Supply Skepticism: Housing Supply and Affordability

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Draft 10/26/2017

Growing numbers of affordable housing advocates and community members are questioning the premise that increasing the supply of market rate housing will result in housing that is more affordable. Many advocates oppose new development unless it serves the households at the very lowest end of the income distribution currently in place in the neighborhood. Community members across a wide range of incomes fear that any new development will attract high income households, leading their neighborhoods to gentrify and become unaffordable to them. In the face of rising prices, both groups are seeking to defeat development proposals and arguing for policies to restrict new development, such as moratoria, downzonings, requirements for community benefit agreements, and more rigorous approval processes. In those arguments, advocates and community members often find themselves on the same side as those who oppose development for reasons having nothing to do with affordability, but are focused instead on protection of historic streetscapes, low density character, individual viewsheds, or other traditional not-in-my-backyard concerns. This confluence of opposition is becoming a powerful block against development proposals. Yet most economists and housing policy experts argue that creating new homes is essential in cities and localities facing rising rents and prices.

Opposition to new development has long been expected from homeowners who benefit from the higher housing prices they believe will result from limits on supply (Fischel, 2001). But opposition to new development now also comes from renters and others who advocate for *lower* rents and housing prices. Those opponents share what we call “supply skepticism” – the belief that additional market rate housing does not help make housing more affordable, and indeed may increase rents and prices.¹ First, skeptics argue that the bundling of land with

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¹ Undoubtedly, renters, others community members, and advocates have reasons for opposing development that are not based in supply skepticism. People often worry that proposed developments will overcrowd their children's schools or their preferred form of transit, change their favorite retail or entertainment venues, or take away their sense of belonging and community (Freeman, 2006; Hutson, 2016). Those concerns may sometimes lie behind

housing fundamentally alters demand and supply relations, and that land in many high-cost cities is such a constrained good that it should be devoted to affordable housing, because any market rate housing will come at the direct expense of affordable homes. Second, skeptics assert that the new development is usually priced at the highest end of the market, and argue that adding supply at the top end will do little or nothing for low- or middle-income families. They dispute the notion that new luxury housing causes other housing to “trickle down” or “filter” to lower income households, at least in a reasonable time frame, and see the markets for high-end and moderate or low income housing as totally independent. Third, skeptics worry about ‘induced’ demand, fearing that the more you build, the more they’ll come, and the more that wealthier people in particular will come. In a dynamic system, they argue, any decreases in price resulting from additional supply will be fully offset by additional demand resulting from the lower cost. Fourth, skeptics seize on potential localized spillover effects from newly constructed housing, and assert that even if increasing supply might slow the growth in housing costs across the city, new housing will increase rents and trigger displacement in the immediately surrounding neighborhood.

Economists and other experts who favor increases in supply have not provided adequate answers to such arguments. They have tended to dismiss local costs to growth, have often reflexively assumed that many or most restrictions on supply are due to “over-regulation,” and have failed to take the supply skeptics seriously. Local elected officials, along with housing and land use agencies, accordingly struggle to offer persuasive arguments to garner support for the increased production of housing. Not surprisingly, then, local residents and other supply skeptics continue to oppose the creation of new housing.

Left unanswered, the beliefs of supply skeptics are likely to continue to feed local opposition to housing construction. And this is particularly concerning at a time when the prevalence and intensity of land use regulations that limit construction have already been increasing over time (Gyourko, Saiz & Summers, 2008; Mullen, 2015).²

This paper is meant to bridge the divide between the arguments made by supply skeptics and what research has shown about housing supply and its effect on affordability. In the following section, we address each of the key arguments that increasing supply does not improve affordability. Many of the arguments are plausible, and we take them seriously, but we ultimately conclude, from both theory and empirical evidence, that adding new homes moderates price increases and therefore makes housing more affordable to low and moderate income families. Moderating prices does not mean prices won’t rise at all; but they won’t rise as much as they would otherwise. We then explore additional reasons to be concerned about inadequate supply response and assess the evidence on those effects of limiting supply, including preventing workers from moving to areas with growing job opportunities. Still, there are crucial gaps to be addressed to help move the policy discussion forward. In the final section, we outline these gaps. We conclude by arguing that there is a role for government intervention in housing markets to

expressions of supply skepticism, but we focus in this chapter only on arguments development opponents are making about the effect adding supply will have on housing affordability.

² Importantly, it is not just regulations, but also the consistency and predictability of the administration of those regulations (Landis, 2017), and the number of veto points for new construction that may have increased – neighborhood reviews and councilmatic vetos add hurdles beyond the usual legislative body approvals, and multiple agencies, jurisdictions and levels of government often are now involved in permitting.

ensure that supply is added at prices affordable to a range of incomes. To benefit local communities, growth in housing supply must be balanced. Adding new market-rate units will not generally address the housing needs of very low income households. Thus, it is critical to provide housing at different price points through inclusionary zoning, subsidies, or other tools for ensuring that communities remain (or become) economically diverse as they grow.

I. The Relationship Between Supply and Affordability: Assessing the Arguments

Given the growing skepticism that increases in housing supply will improve affordability, it is important to understand the arguments that undergird this skepticism and to assess their validity. We analyze four of the most frequently voiced arguments below, drawing on both basic economic theory and empirical evidence.

A. Housing is Bundled with Land, but Still is Ruled by the Laws of Supply and Demand

In virtually all markets, increases in demand initially increase price, as producers face short-run constraints on their ability to increase supply. In the longer run, however, increases in price should induce investment and an expansion in supply, which should dissipate the initial increase in price. Some argue that those normal rules of supply and demand don't apply to housing because housing is tied to a specific plot of land, and unlike other inputs into the production of housing that may be in plentiful supply, the supply of land is limited in many jurisdictions by existing development and by geographical constraints like coasts or mountains (Angotti & Morse, 2016).

It is surely true that land is constrained, especially in certain markets (Saiz 2010). But that does not mean that the laws of supply and demand don't apply to housing. Land can be used more intensively to accommodate more housing. Thus, while the limits on the land with which housing is bundled make housing different from many goods, the difference is one of degree: the supply of housing can and does increase even in constrained markets, and prices should generally fall in response (DiPasquale, 1999 (reviewing the literature); Mayer & Somerville, 2000).

A second version of the argument asserts that normal rules of supply and demand don't apply because the development of market rate housing consumes scarce land that could otherwise be used for affordable housing.³ The argument is accompanied by demands that high percentages (such as 50 percent or more) of all housing developed on private sites should be restricted as affordable housing (Durkin, 2016). But it is not necessarily the case that the land where market-rate housing (or a mixture of market rate and affordable housing) is proposed would otherwise be used entirely for affordable housing. The land might continue to be too costly to support affordable housing, even if the land could not be used for housing for higher

³ A variant on this argument is the complaint that land is used for luxury buildings that are often empty as owners travel or live elsewhere, and should instead be used for affordable housing. (Booth and Adam, 2017 (reporting on Britain Labour leader Jeremy Corbyn's statement that requisitioning "empty" homes might be necessary because "It can't be acceptable that in London we have luxury buildings and luxury flats left empty as land banking for the future while the homeless and the poor look for somewhere to live."))

income households, because there are other uses (such as office or other commercial space) competing for the land. Also, the reasons affordable housing is not provided in larger quantities go far beyond the lack of land and include the inadequacy of funding to pay for construction, financing costs and operating costs. Further, programs like mandatory affordable housing can ensure that even land used for housing for high income households includes some affordable housing in the same development, although no inclusionary program imposes requirements as high as 50 percent of the units.

B. Housing is Heterogeneous, but Adding Supply in One Market Will Affect Prices in Another

Housing has an additional feature highlighted by those skeptical that adding supply in one portion of a housing market can affect prices in other portions: it is more heterogeneous than most other goods. Housing comes in many different forms, ages and sizes. Even in the same city, a four-bedroom house is very different from a two-bedroom apartment and can be considered a different good. Rather than having one unified housing market, it is more accurate to think of a city as having numerous housing submarkets, each with its own demand, supply and price. Skeptics argue, therefore, that additions to housing supply likely will be “luxury” housing, but that “[t]he only increase in housing supply that will help to alleviate . . . [the] affordable housing crisis is housing that is truly affordable to low-income and working-class people” (Aguirre, Benke, Neugebauer & Santiago, 2016). They reject the idea that building housing at one price point has any significant effect on the price of housing in other submarkets (Council of Community Housing Organizations, 2016).

Yet while housing is heterogeneous, additions to the housing stock in one submarket can fairly quickly affect prices and rents in other submarkets by alleviating competition that would otherwise be diverted to those other submarkets. Imagine a city with no new construction. As demand increases and prices or rents rise for higher-end housing, some homeseekers who would have otherwise searched in that submarket will be priced out. They will either leave the jurisdiction altogether or turn instead to somewhat less expensive housing in the same city, increasing demand for housing in the ‘next’ submarket. Unless there have been offsetting declines in demand for housing in those other submarkets, the failure of supply to respond to increased demand at the higher end will ripple through other submarkets as demand spills into these markets and increases their prices and rents.

Over the longer-run, increases in supply at the medium or higher end of the market should also increase supply in lower-priced markets as older units that are now less valuable work their way down to lower-priced sub-markets.⁴ Housing lasts for many years, but most housing ‘filters down,’ or loses value as it ages, representing ‘new’ supply in submarkets at lower price points.⁵ In this way, newly constructed units at the high-end of the market have a ripple effect across connected submarkets. As demand is met at the high-end, the older units that

⁴ In some cases, the high-end housing may be created through the demolition of older, lower-priced homes. If so, then the high-end housing will have the immediate effect of reducing supply and potentially increasing prices in the lower-priced submarket.

⁵ Of course, some older housing might command a premium if consumers value its unique features.

are now less valuable work their way down to other submarkets. While luxury apartments in the most desirable locations may never become part of the stock affordable to low-income households, their creation should help to increase supply and reduce prices in the next submarket, which over time, should trigger some downward filtering of housing through various submarkets to lower-priced submarkets.⁶

Finally, the supply and demand effects interact. For example, the ripple effects created if inadequate supply causes higher end buyers to compete for lower-priced homes may be compounded by owners' decisions to upgrade their buildings. As prices increase in the higher end of the market, owners will find it more attractive to maintain or upgrade existing housing units that would otherwise have aged out of this submarket.⁷ Indeed, if price increases are large and persistent enough, upgrading of existing units (and perhaps entire neighborhoods) will occur in other submarkets, further decreasing supply in less-expensive submarkets.

Empirical research shows that filtering is not just a theory posited on the pages of economic textbooks, but it in fact occurs in real housing markets. Weicher, Eggers, and Moumen (2016) report that 45 percent of the rental units that were affordable to very low-income renters in the U.S. in 2013 had filtered down from owner-occupied or higher rent categories in 1985. Another 21.8 percent were conversions from formerly owner-occupied homes or seasonal rentals.⁸ Note that filtering occurs over a shorter time frame too; among affordable units in 2013, 19 percent had been higher rent units as recently as 2005. Most of the higher priced rental units that filtered down to become affordable in 2013 were moderate rent units in 1985, but 15 percent of those that filtered down were high-rent units in 1985.⁹

Recent work from Harvard's Joint Center for Housing Studies on additions to the rental stock between 2003 and 2013 confirms this pattern: while new construction was the largest contributor for the higher priced rentals, and tenure conversion was the largest source for moderately priced rentals, filtering was the primary source for additions to the affordable rental stock (Joint Center for Housing, 2015, figure 14).

Researchers also look at filtering by examining changes in the incomes of the occupants of a given home. In a recent analysis of the incomes of successive occupants of homes, for example, Stuart Rosenthal finds that the real income of an occupant moving into a rental home in a 30-year old building in the United States is on average 50 percent of the income of an occupant

⁶ It may be that housing advocates belittle arguments about filtering not because (or not *just* because) they are skeptical that it works, or impatient for more immediate results, but because they object to the notion that poorer people should be housed in older units than wealthier households. That discussion is beyond the scope of this paper, but opposing market rate development in the hope that more new construction will be devoted to affordable housing ignores the cost differential between rehabbing existing units and building new, and fails to reckon with the role rehab can play in stabilizing and improving neighborhoods.

⁷ The durability of housing means that at any point in time, newly constructed housing will comprise only a small portion of the housing market and most of the increase in demand in any submarket must initially be absorbed by existing housing. For example, in 2013, only 2 percent of owner-occupied housing had been constructed within the past four years (American Housing Survey, 2013).

⁸ About 32 percent of the units affordable in 2012 were also affordable in 1985.

⁹ Again, there may be an interaction between demand spillovers and filtering: if supply at the high end of the market is limited, demand for that housing will spill over to other submarkets, making it less likely that housing in that submarket will filter down.

moving into a newly built rental unit, suggesting substantial downward filtering of the rental stock (Rosenthal, 2014). He notes that downward filtering is much more rapid in the rental stock than in owner-occupied homes, in part, because of tenure conversion; as the owner-occupied stock ages, a portion converts to rental stock. Rosenthal also finds, however, that filtering rates are considerably lower in areas with high house price inflation, though downward filtering still occurs. This is a reminder that, in tight markets, direct filtering of new homes down to lower priced submarkets can take many decades. Further, in these very tight markets with limited new supply, there is also evidence that older homes ‘filter up.’ Looking at 38 metropolitan areas, Somerville and Mayer (2003) find that units affordable to those with incomes at or below 35 percent of area median income are more likely to ‘filter up’ or become unaffordable in metropolitan areas with the lowest housing supply elasticities than in metropolitan areas with greater supply elasticities, as proxied both by new single-family housing permits and by measures of land use restrictions in the metropolitan area.

In short, new construction is crucial for keeping housing affordable, even in markets where much of the new construction is itself “luxury” housing most people can’t afford. A lack of supply to meet demand at the high end affects prices across submarkets and makes housing less affordable to residents in lower-cost submarkets. Of course, adding supply in surrounding jurisdictions would also help to alleviate demand pressures in a locality, especially if accompanied by transportation improvements. Not all the supply needs to be added in the specific jurisdiction facing increased demand.

It is worth underscoring that allowing more market-rate construction will not address the housing needs of all households. For at least the lowest income households, even the moderation of rent increases that result from expanded supply will likely be insufficient to make homes affordable to them. Subsidized housing is still needed as well. However, as increases in housing supply moderate housing prices and rents overall, the gap between what a jurisdiction’s lowest-income households can afford and available prices and rents will be considerably smaller, and any government subsidies will go considerably further.

C. Easing price pressure through additional supply may attract some demand—but not enough to completely offset the supply increase

Some skeptics argue that even if additional supply could help make housing more affordable in the short run, it won’t in the long run because the additional supply will induce more demand, especially among buyers or renters wealthier than the existing residents in the neighborhood (Redmond, 2015). The claim is analogous to the argument that building more highways will not reduce congestion because the lower cost of travel will simply cause more people to drive or to take that particular route. In this case, the argument is that by making the jurisdiction more affordable, adding housing supply will divert demand -- current residents who would otherwise leave will then choose to stay, and people living elsewhere will choose to move to the jurisdiction. Lower rents and prices may also induce “latent” demand --people who are living with roommates or family members may choose to form their own households (Ellen & O’Flaherty, 2007) or people may choose to invest in pied-a-terres in a city. That additional demand will drive prices back up until supply can again respond, causing housing to be more

affordable, at best, only cyclically, and increasing the density of the jurisdiction, with the attendant costs of congestion.

While building additional highways does appear to induce more demand (Duranton & Turner, 2011), in the case of housing, additional demand is unlikely to offset the new supply. Such an offset requires demand curves to be perfectly elastic; in other words, it assumes that neighborhoods and jurisdictions are perfect substitutes and that there are no constraints on the ability and willingness of households to move. This is clearly unrealistic.¹⁰ Moving homes is not like driving a few extra miles (Lewyn, 2016). Any additional demand for housing is limited by personal and economic constraints on the ability and willingness of households to move, restrictions on immigration, and uncertainty about all the other factors that may determine a market's trajectory. Thus, in the long-run, while some additional households may be drawn from outside (or from within the city) to buy or rent homes as supply increases, it is highly unlikely that prices will end up at the same level they would have reached absent any new supply. Finally, as noted below, the empirical evidence shows that allowing for more supply leads to lower housing prices; if adding supply induced sufficient additional demand to offset the increased supply, the studies would not find an association between supply and prices.

D. Adding Supply May Raise Neighborhood Rents in Some Cases, But Neither Theory Nor Empirical Evidence Suggest that Will be The Norm

Many renters in neighborhoods where market rate housing is proposed express concern that the construction of new housing (and the higher income households who will occupy it) will actually make their affordability problems worse by raising rents or house prices, fueling gentrification, and potentially displacing existing residents (Atta-Mensah, 2017; Savitch-Lew, 2016).¹¹ Hankinson (2017) theorizes that renters' opposition to local additions to supply is driven by such worries; he argues that it is plausible that the construction of an attractive new building will increase prices locally (by improving the physical landscape, bringing new amenities to the neighborhood, and signaling that the neighborhood is improving), even as it reduces them citywide.

Testing this proposition empirically is quite challenging, given that developers will naturally be attracted to areas where prices and rents are rising. There is evidence from New York City that improvements to blighted housing can, in some circumstances, increase surrounding property values, even when the new or improved housing is subsidized, low-income housing (Diamond & McQuade, 2016; Schwartz, Ellen, Voicu & Schill, 2006). The new housing studied, however, replaced large swaths of vacant, abandoned buildings and littered vacant lots, in essence removing a disamenity.

¹⁰ For example, Kok, Monkkonen and Quigley (2014) argue that the large positive association they find between land use regulations and land prices in the San Francisco Bay Area is due in part to fact that jurisdictions in the Bay Area are not close substitutes.

¹¹ Residents also express concerns about the costs that additional development might impose upon the neighborhood's quality of life, by exacerbating traffic congestion, competition for parking, school over-crowding, and other strains on public services. That broader issue of local costs for broader societal benefits in the land use context is addressed most recently by Monkkonen (2016); see also Schively (2007) (reviewing the literature).

Theoretically, we might also expect positive localized spillover effects for market-rate housing, even when it does not replace a source of blight, as it may bring new retail amenities and/or signal that an area is ripe for new development. But there are two forces potentially at work when new housing is constructed in a neighborhood facing increased demand. On the one hand, the construction could spur additional investment and demand, placing upward pressure on prices. On the other hand, newly constructed units in the neighborhood absorb some of the new demand and dampen pressure on prices. In the absence of new construction, the unsatisfied demand will go somewhere. Some may be diverted to other neighborhoods or jurisdictions; but some will likely remain, bidding up rents and prices for the existing stock, and making it profitable for owners to upgrade the stock to accommodate new entrants rather than existing residents. Thus, even in those cases where construction spillovers are positive, the net effect of new construction on price is unclear.

There is almost no empirical evidence about the net effects new market rate housing has on the prices or rents of immediately surrounding homes, but a California legislative analyst office study suggests that additional market rate construction is linked to *lower* displacement rates (Taylor, 2016). Examining low-income neighborhoods in the Bay Area between 2000 and 2013, the researchers found that the production of market rate housing was associated with a *lower* probability that low-income residents in the neighborhood would experience displacement.¹² This suggests that for neighborhoods in high-demand cities, blocking market-rate construction may not forestall the demand pressures that can lead to displacement; indeed, the lack of new construction may place greater pressures on the existing stock.

In short, while it is clear that the construction of new homes will moderate price and rent increases citywide, neither theory nor empirical evidence provides clear guidance about when localized spillover effects might occur and when they might actually cause an increase in the prices and rents of immediately surrounding homes.

E. Empirical Evidence About Market Effects of Additions to Supply

We have offered mostly theoretical counters to the arguments above, but it is also important to note the considerable body of empirical research showing that less restrictive land use regulation is associated with lower prices. (Most of the studies are framed as studying whether stricter land use regulations increase prices, but they could just as easily be framed as examining whether relaxing regulations reduces prices.) The evidence takes many forms. A large number of cross-sectional studies show that stricter (less strict) local land use regulations are associated with less (more) new construction and higher (lower) prices. Glaeser and Gyourko (2003) along with Gyourko and Molloy (2015) survey that literature.

A few studies use panel data and find that the adoption of more stringent land use controls lead to higher prices. Looking at longitudinal data on municipalities in the Boston metropolitan area, Glaeser and Ward (2009) find that the adoption of stricter local regulations leads to higher house prices, but the coefficient falls in magnitude and loses significance once they control for population demographics. They point out that this is expected, if homes in other

¹² Displacement was defined as either (i) a decline in the absolute number of low income household in census tracts that were otherwise growing, or (ii) larger declines in low income households than households overall in the tract.

jurisdictions are seen as perfect substitutes. Thus, while supply restrictions may increase prices in a market as a whole, they may not increase them disproportionately in the particular locality where they are imposed due to spillover effects across jurisdictions. Zabel and Dalton (2011) also use longitudinal data from localities in Massachusetts and find that increases in minimum lot sizes are followed by significant increases in prices.

Several other researchers use instrumental variables to try to assess the effects of regulatory restrictions. Ihlanfeldt (2007) instruments for regulation in localities in Florida and finds that predicted regulations significantly increase the price of single-family homes. Saks (2008) instruments for increases in demand and shows that increases in labor demand lead to less residential construction and larger increases in housing prices in metropolitan areas with more restrictive housing supply. Kok, Monkkonen and Quigley (2014) show that the stringency of regulations in a jurisdiction is strongly associated with higher land prices in the San Francisco Bay Area.

In sum, while many supply skeptics offer plausible arguments, the preponderance of the evidence shows that supply matters for housing prices and that adding supply would increase housing affordability. That said, adding supply is necessary but not sufficient to make housing more affordable. Subsidies will still be needed to reach those with very low incomes. But if supply is not added, affordability problems will be worse across all income levels, and the limited public subsidies that exist will serve far fewer households.

II. Broader Effects of Limiting Housing Supply

The higher housing prices caused by constrained supply have consequences beyond affordability for households and communities. The effects are intertwined: supply constraints raise housing prices, and increases in housing prices in turn have a variety of other negative consequences, including interference with the functioning of regional and national economies. After all, interdependencies in housing markets are not limited to submarkets of a given city. As housing prices continue to increase in a city as a result of supply restrictions, some of those who are priced out will opt to live elsewhere, perhaps in surrounding suburbs, or perhaps in exurban areas or other markets altogether. If many choose to live further away but in the same metropolitan area, commute times are likely to increase, and income and racial segregation in the region could potentially rise as lower income and minority households disproportionately move further away from the central city. If many choose to live in other metropolitan areas altogether, this could undermine both local and national economic growth and fuel inequality. Those effects should be considered by policy makers as part of the possible benefits of decreasing supply constraints and in identifying a broader set of stakeholders to support the creation of new housing.

A. Restricting Supply Imposes Environmental and Other Costs Related to Automobile Dependence

Restrictions on supply often are associated with lower density and less compact development; indeed, regulations like minimum lot size requirements may be explicitly aimed at preserving the lower density of the existing urban form. When supply is restricted in denser areas, demand may be diverted to lower density suburban or rural areas, and less dense and compact development is associated with a variety of environmental harms, many of which stem from the long commutes by automobile that are associated with sprawl. Some of the most serious environmental costs are air pollution and greenhouse gas emissions. Research shows that living in areas with higher population densities and other features of compact urban form decreases the harmful emissions associated with personal automobile travel by those households (for reviews of the vast literature see Ewing & Cervero, 2010; Stevens, 2017; and the debates those reviews generated, e.g., Ewing & Cervero, 2017; Handy, 2017). Similarly, a variety of research shows that higher density and more compact urban forms result in less energy use for heating and cooling buildings, and therefore fewer greenhouse gas emissions (Estiri, 2015; Ewing & Rong, 2008; Pitt, 2013; Resch, Bohne, Kvamsdal, & Lohne, 2016). Higher residential density is also associated with lower per capita impacts on water quality from development (Jacob & Lopez, 2009), and with lower rates of destruction of critical habitat and open space (Ewing & Kostyack 2005).

B. Restricting Supply May Exacerbate Income and Racial/Ethnic Segregation

It is difficult to test whether density restrictions heighten segregation, and the existing work is cross-sectional. But the little empirical evidence that exists suggests an association between land use restrictions and segregation. For example, one recent study suggests that such restrictions are statistically associated with higher levels of segregation of the affluent, although *not* of low-income households (Lens & Monkkonen, 2015). As for racial segregation, stricter restrictions on density are associated with greater segregation in large U.S. metro areas (Rothwell & Massey, 2009), and smaller minority populations in individual jurisdictions (Pendall 2000; Quigley, Raphael & Rosenthal, 2004). Finally in Massachusetts, blocks zoned for multifamily housing have black population shares 3.4 percentage points higher and Hispanic population shares 5.8 percent higher than the blocks directly across the border from them that are zoned for single family use (Resseger, 2014).

C. Restricting Supply Reduces Economic Productivity and Increases Inequality

Supply restrictions also likely hinder economic growth, especially for those with the weakest employment prospects. If people who are priced out of a particular city choose to live in another metropolitan area altogether, that city's work force will shrink and productivity may decline. Supply restrictions that prevent people or businesses from locating in the neighborhood they prefer also can result in lower productivity and other deadweight losses (Rodriguez & Schleicher, 2012). There is strong empirical evidence that businesses thrive and workers are more productive when they are located in large, dense cities with lots of diverse economic activity (Glaeser, 2011; Kolko, 2010; Quigley, 1998). Constraints on housing supply in a city inhibit the growth and diversity that is essential to productivity. Raven Saks Molloy shows that increases in demand for workers in cities with more restrictive land use regulations lead to less new housing construction, higher prices, and lower levels of long-run employment as compared to areas with less restrictive regulations (Saks, 2008).

Further, to the extent that land use regulations restrict the supply of housing and raise prices, they make it more difficult for workers to move to the cities with more productive businesses. Interstate mobility rates have fallen significantly since the 1980s (Frey, 2009; Kaplan & Schulhofer-Wohl, 2017; Molloy, Smith, & Wozniak, 2011), even from areas with declining employment opportunities (Autor, Dorn, Hanson & Song, 2014), and especially for those with the lowest incomes and skills (Notowidigdo, 2013). Areas that are seeing especially high productivity gains, like New York, San Francisco, San Jose, and Boston, have not seen population growth to match those gains (Glaeser, 2011).

Chang-Tai Hsieh and Enrico Moretti show that this reduced mobility is not only harmful to individual workers or cities but also to national productivity. They estimate that if workers and capital had been able to move freely between 1964 and 2009 to respond to higher wages, national output would have been 10 percent higher in 2009 (Hsieh & Moretti, 2017). Further, they find that much of the drag on productivity stems from just a few metropolitan areas, because less restrictive land use practices in the South have allowed housing supply to keep up with the increased productivity of most of the southern cities.

Ganong and Shoag (2015) argue that the reduced mobility resulting from the constrained supply of housing is also exacerbating inequality and locking in economic differences across states. They point out that the relative gains in income and housing costs achieved by moving to high-cost regions vary with occupations. For workers in low-wage occupations, the increases in housing costs they would have to endure when moving to a state with restricted housing supply are larger than the gains in income they would enjoy. The calculus differs for workers in high-wage occupations, however, for whom income gains have continued to outpace housing cost increases. In other words, highly educated workers may still find it profitable to move to supply-restricted places, while less educated workers do not, which is exacerbating inequality across cities and states. The differential mobility also may have very long term effects on inequality, because many of the areas to which more highly educated workers may be more likely to move have higher levels of intergenerational mobility than the areas in which less educated workers remain (Schleicher, 2017).

D. But Regulations that Restrict Supply May Provide Important Benefits

Regulatory barriers that restrict supply also may provide benefits, by protecting environmental resources, ensuring health and safety, delaying construction until necessary infrastructure improvements are made, and providing certainty to the market. Indeed, those benefits may increase demand: Been and her colleagues point out that land use regulations can make an area more attractive to homebuyers because they offer greater certainty that an area's buildings (and potentially their residents) will not change much over time, and thereby increase prices (Been, Ellen, Gedal, Glaeser & McCabe, 2016).

But often the benefits secured by regulatory restrictions are enjoyed by a small number of existing property owners and/or existing residents, while costs are borne by a larger set of households who either rent or would like to live in the area. Both efficiency – the relationship between costs and benefits of particular restrictions – and fairness -- the incidence of who bears the costs and benefits of the restrictions – need to be more closely examined.

III. Moving Forward?

The arguments skeptics advance in opposing increases in the supply of housing are inconsistent with the evidence, and if successful in defeating most proposals for additional housing (and density), are likely to result in significant harms. They do, however, underscore the need for some governmental intervention in housing markets to require or incentivize a balanced approach to new development. Because the price effects of market-rate construction may be slow to materialize and are unlikely to be sufficient to address the needs of very low-income households, it is important for local governments to seek to ensure that new supply comes on line at a range of price points, so that growth is balanced among the various income levels in the community. Even in cities that have robust affordable housing programs, the supply usually is far less than the need, and is fairly narrowly targeted to households making 50 to 60 percent of Area Median Income because of the structure of the Low Income Housing Tax Credit program. Households with incomes below that level are often left out, as are those with incomes just above, many of whom also face affordability challenges in high-cost cities. To ensure that a range of income groups are seeing the benefits of the jurisdictions' growth through new housing, local governments may want to use subsidies, together with a variety of housing policy tools, to achieve visible additions to supply at a variety of price points.

Achieving additions to supply at a range of prices will require a suite of complimentary tools, from incentives to encourage housing affordable to various incomes (such as subsidies, cost-cutting measures like streamlined permitting, property tax abatements and density bonus programs) to requirements such as mandatory inclusionary housing that insist on mixed income housing or neighborhoods. Getting out of the way to allow additions to supply, and adopting and implementing tools to ensure that supply is provided for a range of incomes, is not an easy policy or political task. Stakeholders may see moderate- or middle-income housing as coming at the expense of housing for low and very low-income households. Communities are unlikely to trust that the housing for anyone other than the wealthiest buyers will actually be provided, so they may be reluctant to approve additions to supply that are not specifically committed to particular income groups. Jurisdictions need to be armed with more than the standard laundry list of affordable housing tools. Instead, they need tools appropriate for their particular markets and context, which requires: that they get assistance in analyzing what housing is needed in different submarkets; that they can draw on rigorous assessments of how well various tools and policies have actually worked in particular contexts; and that they can tailor tools and policies to the political economy of their jurisdictions.

A. Gaps in Research:

Although a considerable body of research shows that additions to supply are critical to moderate price increases, allow workers to move to areas with growing job opportunities, and help subsidy dollars serve more low-income families, there are still a number of research gaps. Most fundamentally, the lack of good data on rents make it difficult to assess how changes in housing supply affect rents (as opposed to home prices). It is critical that we find new ways to track rents, so researchers can rigorously analyze the effects that adding supply has on both the local neighborhood and on the jurisdiction and region.

Second, there is a lack of research on how, and the extent to which, housing filters up or down in various submarkets. Skeptics rightly are wary of “trickle-down” housing policies because of the time the filtering process takes, and because high-end housing rarely trickles down to become affordable to those with very low incomes. But we need more facts about the extent to which new housing filters down to lower price points, and at what pace. Much more research also is needed about how to protect the supply of existing unsubsidized affordable housing – so called “naturally occurring affordable housing” – from deterioration or upward filtering.

Third, concern about the effects that new development can have in spurring gentrification or local price and rent increases suggests that additional research on the local costs and benefits of new development (and of changes in neighborhoods more generally) is necessary. Neighbors of proposed new developments fear displacement from rent increases, but there is little hard evidence of displacement. We need more research to learn what happens to rents and how residents fare when their neighborhoods see new development, either through uncoordinated additions to supply or through comprehensive neighborhood redevelopment.

Fourth, many opponents of new supply argue that most of the supply is luxury housing, and much of that is bought by people who do not reside in the city and whose competition drives up the cost of housing (Francis, 2016). Some recent research suggests that an increase in the share of out-of-town buyers is associated with an increase in house prices (Favilukis & van Nieuwerburgh, 2017; Sá, 2016). But other research finds no association (Cvijanovic & Spaenjers, 2017), and finds that at least some of those out-of-town buyers are not competing with the median homebuyer, but are aiming at the most expensive properties, where supply is most likely to be sufficient to meet demand (Terrazas, 2017). Additional research is needed on how much of the new construction in different cities in the United States is built at different price points, who is buying in each price range, how competition at the very highest end of the market affects the propensity of housing units to “filter up,” and whether any price effects associated with out-of-town buyers vary at different price points.

On a policy front, analysts need to revisit whether the political economy of local opposition to new development has become such an impediment to larger societal goals that the distribution of power between local, regional, and state governments and between the states and the federal government should be changed. That will require more rigorous research on the efficacy of the various ways states have sought to encourage additional supply – from state laws like Massachusetts 40B (which allows affordable housing developers to override local zoning rules in municipalities in which less than 10% of the housing stock meets specified affordability thresholds) to California’s efforts to discourage sprawl and encourage additions to supply at higher density. The assessment of fair housing requirements of the Affirmatively Furthering Fair Housing regulation provide opportunities to identify strategies to link school, transit, park, and other improvements to new housing that includes affordable units, and research will be needed to measure whether those assessments help reduce barriers to increasing supply.

Additional thought is also required about creative solutions to balance local concerns about new development against the need for affordable housing. Hills and Schleicher (2011)

have proposed a zoning budget, where downzonings have to be matched by upzonings, for example; fair share allocations of needed new supply may achieve similar purposes. Environmental impact review processes may need to be refined to better take into account the costs of not building and to ensure that credible analysis of the potential for localized costs of new development is conducted.

Answers to the rich set of research topics supply skepticism suggests could contribute directly and concretely to efforts to make housing more affordable and to make local housing policy more effective. Supply skepticism is a useful reminder that researchers and policymakers must provide more specific and concrete answers to concerns that communities have about the costs, benefits, and distributional effects of development in their neighborhoods and communities. It also shows the need for policymakers to be frank that adding supply is unlikely ever to meet the housing needs of the very lowest income households in our communities, and will have to be paired with subsidies. Finally, it reveals that communities should use both incentives and requirements to ensure that when new supply is added in a community, it achieves a healthy balance of incomes in all neighborhoods.

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