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Jobs and Housing (Im)balance in the San Francisco Bay Area

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Abstract

In this paper, we review and synthesize the academic and policy literature on jobs and housing balance with particular attention to the San Francisco Bay Area. Specifically, we discuss the economics of housing supply and demand to better understand the distribution of home prices and the jobs-housing imbalance. Land use regulations in the San Francisco housing market are the biggest impediment in restricting housing supply in a robust and booming urban economy. Indirect effects of land use regulations are observed in the loss of housing wealth, greater spatial distribution of people across urban labor markets, and losses in overall productivity of workers. We discuss various facets of housing demand including data on employment growth, wage growth, and productivity growth. In the long run, land use regulations are onerous and rob the San Francisco Bay Area from achieving its full potential in economic output and regional productivity. Finally, we discuss policy interventions that can minimize the adverse effects of the jobs-housing imbalance in the San Francisco Bay Area.

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INTRODUCTION

The United States experienced its longest uninterrupted period of economic expansion in the 1960s with the housing and computer industry dominating. Historically, economic growth has been accompanied with local construction growth (Glaeser and Gyourko 2018). Growth coupled with low-regulatory environments triggered a construction boom in coastal cities like San Francisco and New York in the latter half of the 20th century.³ However, **housing regulations** became tougher between the 1960s and the 1990s, particularly in urban centers, altering the historical relationship between job growth and housing supply. **Land use regulations** have been the biggest impediment in constraining housing supply, but a multitude of factors deserve mentioning. This trend of increasing regulation has persisted ever since, creating a long term imbalance between economic growth and construction of new housing. An unfortunate consequence has been a chronic deficit of housing supply which has led to exuberant housing prices in booming American urban centers such as San Francisco Bay Area.

HOUSING SUPPLY

In economics, market equilibrium in a well-functioning housing market is attained when there are equal number of buyers and sellers, or, from a cost-benefit analysis view, when home prices are equal to the minimum profitable cost of production. During the period from 2008 Q3 to 2018 Q2 Housing Balance Period, only 24% of net new housing produced was affordable (San Francisco Planning Department Housing Balance Report 2018).⁴ What is concerning is the distribution of the cumulative Housing Balance over the 11 Board of Supervisor Districts which ranges from 277% to 72%.⁵ According to the report, this high degree of variation can be attributed to the large number of units that are permanently withdrawn from rent control protection relative to the total number of net new units and net affordable units built in those districts. Below we discuss the causes for the imbalance from the supply side.

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³ Charts for US GDP growth and growth in new privately owned housing on the Federal Reserve Bank of St. Louis Economic Database (Federal Reserve Bank of St. Louis Database 2018b; Federal Reserve Bank of St. Louis Database 2018a)

⁴ Housing Balance is defined as the proportion of all new affordable housing units to the total number of all new housing units for a 10 year Housing Balance Period.

⁵ For more information on the distribution of various districts, see (San Francisco Planning Department 2018a).

Variation in Housing Regulation

Local land use regulations and active neighborhood resistance have hindered new construction by increasing regulatory burdens, covenants, and wait times to obtain permits.⁶ In most of San Francisco, no building can be above 40 feet high.⁷ These roadblocks distort the housing market by intervening between housing producers and consumers. In fact, the primary cause for disparity in home prices is due to housing regulations and zoning laws, not geographical limitations (Glaeser and Gyourko 2018). These prohibitive rules severely curtail where building can occur and create more red tape, constraining the number of new housing construction permits issued, notwithstanding that the side effect of regulation appears to be rising home prices, less new construction, and reduced elasticity of housing supply (Gyourko and Molloy 2015).

For example, proposals for physical development in California need to undergo an environmental impact review to investigate the project's impact on the local environment. These reviews sometimes require years to complete and add additional costs, delays, and uncertainty to the economic landscape, thereby deterring new housing starts. The Wharton Land Use Regulation Index gathered responses from a nationwide survey of residential land use regulation in over 2,600 communities across the U.S. to develop a series of indexes that capture the stringency of local regulatory environments and San Francisco has ranked among the highest in regulatory environments (Gyourko et al. 2008).⁸

But the regulatory environment in San Francisco is not due to out-of-touch bureaucrats or corporate interests. In fact, housing laws are often influenced by private homeowners who benefit if the housing supply is kept stagnant (Glaeser and Gyourko 2018). In the *home voter hypothesis*, homeowners work in tandem to restrict new development (Fischel 2001). Landowners' incentives may be driven by social factors, too, as they may not like the idea of settlement by new groups of people who may, culturally or aesthetically, change the makeup of the neighborhood, particularly people from differing socioeconomic groups. These studies suggest that homeowner opposition to development in local areas plays a significant role in constraining housing supply.

Such residents who advocate for development in locations besides those in close proximity are referred to as *NIMBYs*, which stands for "not in my backyard." The term *NIMBYs* has stoked community discussion and controversy to such an extent that it has galvanized an alternative movement of activists who call themselves *YIMBYs*, which stands for "yes in my backyard." *YIMBYs* are pro-housing and advocate for new development within close range of their residences and workplaces in order to make housing more affordable and to decrease

⁶ See the trend of housing permits (Metropolitan Transportation Commission 2018c) and trends in new housing supply and house price to cost ratios as well as permitting intensity (Glaeser and Gyourko 2018, 17-19).

⁷ See Summary of the Planning Codes for Residential Districts (San Francisco Planning Department 2018b).

⁸ Highly (lightly) regulated places tend to be highly (lightly) regulated on virtually all the dimensions. Thus, there is no evidence that communities target specific items or issues to regulate. The stringency of regulation is strongly positively correlated with community wealth, so richer and more highly-educated places have the most highly regulated land use environments. However, the stringency of regulation is weakly negatively correlated with population density. The fact that the densest communities are not the most highly regulated strongly suggests that the motivation for land use controls is not a fundamental scarcity in the sense that these places are "running out of land."

carbon emissions through shortened commutes. Frictions stemming from a heavily regulated housing market can have debilitating effects on already-existing problems like congestion, homelessness, standards of living, job growth, and affordability.

Variation in Construction Costs

Two cities with different **geographical characteristics** will experience some variance in construction costs. For example, building on flat land (like the American Midwest) is far easier than building on the steep hills found in San Francisco (Glaeser and Gyourko 2018; Rosenthal and Strange 2008; Saiz 2010). Scarcity of land, especially in coastal cities, will always be a critical concern since expansion is topographically limited (Joint Center for Housing Studies of Harvard University 2018).⁹

Although **prices of raw material and manufactured goods**, used as inputs in residential construction, have increased, the difference in input prices has kept pace with inflation and is considered moderate over the long term (Glaeser and Gyourko 2018). Hence, in real terms, rising home prices cannot be explained by higher construction material costs alone (Davis and Heathcote 2007; Davis and Palumbo 2008; Gyourko and Molloy 2015). This sets the trend of home prices generally rising faster than costs. From 1985 to 2013, the share of metropolitan areas with median price-to-cost ratios above 1.25 has risen from 6.4 percent to 15.9 percent. Consequently, there are now a modest number of markets in America that is priced substantially above minimum profitable production costs (Glaeser and Gyourko 2018).

According to RSMMeans data, the industry standard for the construction cost database, a 1,200 square foot house in a lightly regulated and heavily regulated housing market should cost \$140,000 and \$180,000, respectively (looking at structural costs only) (Glaeser and Gyourko 2018). Despite nationwide construction cost homogeneity, in San Francisco's housing market, the median home price is over one million dollars - a stark variation from the average home price of neighboring Tri-Valley area where a median home costs \$350,000 dollars (Bay Area Council Economic Institute and McKinsey and Co. 2018).

In San Francisco, developed land has become scarcer and the problem is so acute that the duration of the supply of vacant developed lots lasts a mere of nine months whereas a 24-36 month supply is considered a balanced market (Joint Center for Housing Studies of Harvard University 2018, 9). The cost of land itself has also increased in real terms due to the restrictive land use regulations (Glaeser and Gyourko 2018). Regulation and geography limit building and increase prices (Saiz 2010).

Impact of Supply Restrictions on Household Wealth, Labor Markets and Productivity

Household Wealth

Rising prices have impacted **household wealth** by increasing the market value of home prices. Increases in housing capital account for 83% of the increase in the ratio of private capital-to-income from 1970 to 2010, demonstrating that home value has been the biggest boost to

⁹ While labor costs because of unionized labor increase cost of housing production, this is almost a necessary evil in a city with exuberant housing costs. Also, cutting labor costs by manufactured housing for instance, may not be desirable.

American families' total gains during a long period of robust growth (Glaeser and Gyourko 2018). The biggest winners are a small number of older Americans who bought homes in coastal towns when home prices were much lower and interest rates were exorbitant (Glaeser and Gyourko 2018).

Higher home prices are often accompanied by increasing living costs. But, notably, the increase in asset value exactly offsets the rising cost of living (Sinai and Souleles 2005) leaving homeowners hedged against a higher cost of housing and renters more poorer in real terms (Glaeser and Gyourko 2018). The S&P Case-Shiller Index and the Federal Housing Finance Agency (FHFA) housing price index show a 109% increase in San Francisco's housing market from 1991-2016 (Core Logic 2018; Federal Housing Finance Agency 2018). Supply constrained housing markets have largely contributed to the increase in household wealth in recent decades (La Cava 2016). Owning a home, which is considered a durable economic good, is considered an excellent hedge against inflation as market prices are positively correlated with inflation. Renters directly suffer from increased rent prices due to inflation and first-time home buyers feel cost-burdened in coming up with sufficient down payments (Joint Center for Housing Studies of Harvard University 2018, 12).

Labor Markets and Productivity

In highly productive cities like San Francisco, restrictive supply of new housing has created a misallocation of labor, limiting workers' access to housing markets close to their workplace. Though increased local employment is a bright spot in the big picture, the problems that have materialized include rising home prices and rents, effectively stopping workers from finding homes in or near these productive metros.

The growth in the supply of housing lags far behind jobs growth (Bay Area Council Economic Institute and McKinsey and Co. 2018, 33), forcing workers to migrate out of San Francisco into neighboring areas. Consequently, areas surrounding San Francisco, have also seen modest increases in home values further worsening affordability in the Bay Area (Bay Area Council Economic Institute and McKinsey and Co. 2018, 34).

In turn, commute times have increased, congestion has worsened and this has caused a concern for increased levels of carbon emission. A new term has been coined for commuters requiring over 90 minutes to get to work: "supercommuter." According to travel analytics firm INRIX, which publishes an annual Global Traffic Scorecard, San Francisco is now in the top five cities to have the worst traffic and estimates that congestion costs the city 10.6B in lost productivity each year.

Several studies have supported the notion that if more housing were available in San Francisco, productivity and GDP would also increase (Ganong and Shoag 2017; Hsieh and Moretti 2017). Particularly, GDP could be 9 percent higher if more housing stock was available in cities like San Francisco, San Jose and New York. Reducing barriers to residential mobility and increasing housing supply will also create more stability in the jobs-housing balance (Cervero 1996). Housing supply is framed as an issue in similar ways: blaming excessive fiscal zoning laws, anti-growth policies, and local neighborhood resistance (Glaeser and Gyourko 2018; Cervero 1996).

HOUSING DEMAND

Given record high home prices with demand surpassing supply, there exists a disequilibrium in the San Francisco Bay Area housing market. On a national level, general population growth is caused by growth in new household formation, increases in longevity, and foreign immigration (Joint Center for Housing Studies of Harvard University 2018). Increases in these factors contribute to increases in housing demand.

However, we observe that millennials are not forming households as rapidly as previous generations did and they are having fewer kids - particularly in the Bay Area, population growth has been slow (Bay Area Council Economic Institute and McKinsey and Co. 2018). Furthermore, older white households are experiencing higher mortality rates, and net foreign immigration is projected to decline in the coming years (Joint Center for Housing Studies of Harvard University 2018).

Employment Growth

Rapid employment growth, in health care and tech industries, has added over three million new jobs per year in the Bay Area since 1990 (Metropolitan Transportation Commission 2018a). High-tech employment alone accounts for 5% growth in employment each year. San Jose and San Francisco rank highest among metropolitan statistical areas (MSA) with the densest concentration of high-tech jobs (Bay Area Council Economic Institute and McKinsey and Co. 2018). In San Francisco, the unemployment rate is 2.8% much lower than the national rate of 4.1% (Metropolitan Transportation Commission 2018d). Being in close proximity to these industries has allowed surrounding service and industry sectors to thrive - a common spillover effect. Information and innovation spreads easily and this has further bolstered hiring in the region.

Wage Growth

Relative to other metros, Bay Area wages are much higher (\$52,100 annually versus \$39,800 in Los Angeles (Bay Area Council Economic Institute and McKinsey and Co. 2018, 9). Furthermore, the year-over-year change in income came at a much accelerated pace than the nation's average, 4.5% versus 3% (Bay Area Council Economic Institute and McKinsey and Co. 2018, 22). Companies like Apple, Google, and Facebook have not only captured the largest share of high-skilled workers in the Bay Area but their real estate/office space footprint spans a large region.

The local population tends to be more educated than the national average: 46 percent in the Bay Area versus the U.S. average of 31 percent (Bay Area Council Economic Institute and McKinsey and Co. 2018, 7). Higher wages can be explained by the diverse, innovative, and productive workforce. Increasing wages have attracted new skilled workers from neighboring areas but soaring home prices have equivocally made it harder for them to stay.

Productivity/Innovation Growth

The GDP per capita in the Bay Area is \$80,000 - the highest in the nation (Bay Area Council Economic Institute and McKinsey and Co. 2018, 5). This is not surprising when we observe that three of the five most valuable companies – Apple, Google, and Facebook – are

situated in the Bay Area, and 33 of the Fortune 500 companies call the Bay Area home (Bay Area Council Economic Institute and McKinsey and Co. 2018, 11). These companies bring jobs and innovation to the Bay Area. This claim is empirically backed by the number of patents issued in the Bay Area relative to other metros (Bay Area Council Economic Institute and McKinsey and Co. 2018, 9). Furthermore, the Bay Area attracts venture capitalists that fund innovative (and risky) projects in areas such as AI, Big Data, FinTech, Life Sciences, Mobile and SAAS (Software as a Service). In 2016, 45% of all venture capital investment in the U.S. was concentrated in the Bay Area (Bay Area Council Economic Institute and McKinsey and Co. 2018).

Prices and Affordability

Of the top five cities in the United States that had the highest housing price-to-income ratios, two Bay Area cities made the list: San Jose (with a ratio of 10) at number one on the list, and San Francisco (with a ratio of 8.9) at number four (Joint Center for Housing Studies of Harvard University 2018, 12). Despite working in Silicon Valley, which comprises mostly suburban area, many tech workers desire to reside in the city of San Francisco in search for a better quality of life.

San Francisco Bay Area has experienced unprecedented economic success and a prolonged crisis of affordable housing. There is a sharp divergence between rising home prices and rising wages; this means even though incomes have been rising, increases in home prices have far exceeded the increases in income (Joint Center for Housing Studies of Harvard University 2018). Furthermore, the income growth among low- and moderate-income households has been weaker, making it more difficult for them to afford to live in the San Francisco Bay Area, causing ever longer commute times, greater congestion, and more pollution. Affordable housing has now been put on the forefront of all local policy debates. According to the affordability index, of existing single-family homes, a 2.2% decline in affordability was measured across San Francisco, Oakland, and Hayward (National Association of Realtors Housing Affordability Index 2018).

The National Low Income Housing Coalition notes that workers in California would have to earn \$32.68 an hour to afford the median rent on a two-bedroom apartment. In San Francisco, they would need to earn \$60 per hour (Joint Center for Housing Studies of Harvard University 2018). Residential rent in the SF Bay Area is among the highest in the United States and this cannot be explained by higher quality, higher operating costs, or higher construction costs. At least one third of the total rent paid is land rent (Barton 2011). Housing boom and bust cycles have delayed home ownership among young adults since the 1980s. The impact of unaffordable housing units is amplified with low income earners who rely on federal subsidies and funding, much of which has been halted in recent times.

More than 56 percent of the **homeless** population resides in high-cost metros. San Francisco along with Los Angeles, Seattle, and New York are now facing an epidemic homeless crisis (Joint Center for Housing Studies of Harvard University 2018, 35). Cervero (1996) emphasizes a holistic approach by taking the focus away from a purely numerical target and attempting to satisfy the preferences of workers in job-rich cities. This will help alleviate **transportation and environmental issues** as it will encourage more walking, biking, and public

transit usage, ultimately reducing vehicle miles travelled (VMT). Local authorities can force relocation of office construction plans to “housing-rich” areas to ensure that there will be enough office space in areas where housing supply is abundant to reduce commute times and congestion and, equivocally, can redirect housing construction into “jobs-rich” areas.¹⁰

Furthermore, critics have questioned whether fostering the jobs-housing balance will ever be an effective way to mitigate congestion issues, citing several reasons: workers in two-earner households usually work in different locations, frequent job turnover reduces the desire to locate within close proximity to one’s workplace, residential mobility continues to be hindered by exclusionary zoning policies and housing discrimination, and factors other than job access, such as quality of schools, are increasingly influencing residential location choices (Giuliano 1991; Giuliano 1995; Downs 2000).

Whether it’s applying caps on ride-sharing companies or introducing surge pricing on the Bay Bridge, one popular method of alleviating congestion is by smart tax policy, tolls, and peak-load pricing. Further, studies like (Bedolla et al. 2007) have offered recommendations to the Metropolitan Transportation Agency (MTA) in the past to accelerate usage rates of the San Francisco Bay Area’s FasTrak (Electronic Toll Collection (ETC)) system to mitigate traffic congestion across the San Francisco Bay Area toll bridges. These recommendations have proved to be useful as FasTrak usage rates have surged (Bollapragada and Kakar 2018).

CONCLUSION AND POLICY IMPLICATIONS

Because exuberant home prices in the San Francisco Bay Area have been accompanied by significant reductions in residential construction, housing supply is inevitably limited. We do not find that this limited housing supply is caused by a declining availability of land, but rather has been a result of an unprecedented and changing regulatory regime that makes large-scale construction development increasingly difficult and expensive. This burden is unfortunately borne by residents in the region who incur high housing costs, which in numerous ways affects their quality of life.

In order to support sustained long term growth in the booming Bay Area economy and ensure that we achieve our full potential in economic output and productivity, policy makers need to deregulate supply on high-potential land, reduce the costs and uncertainty associated with developing new housing, and ensure that low-income and vulnerable individuals who are priced out of the market have access to affordable housing. The Plan Bay Area 2040 is a plan that is strategically trying to address acute bottlenecks for Bay Area’s economy in the future (Metropolitan Transportation Commission 2018b). Similarly, inclusionary housing programs are one way to address the issue of housing affordability for low or middle income residents in new buildings (SF Mayor’s Office of Housing and Community Development 2018). However, unlocking housing supply via deregulation in land use has the potential to be the most significant policy prescription to address the housing supply bottleneck in the Bay Area at its root.

¹⁰ The aforementioned strategy was adopted by the Southern California Association of Governments and South Coast Air Quality Management Districts in 1989. However, due to skepticism of the effectiveness of this policy, the above localities favored reliance on market forces with the hope that the imbalances will be automatically adjusted. Authorities instead introduced a car scrappage tax benefit to reduce air pollution and traffic congestion.

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