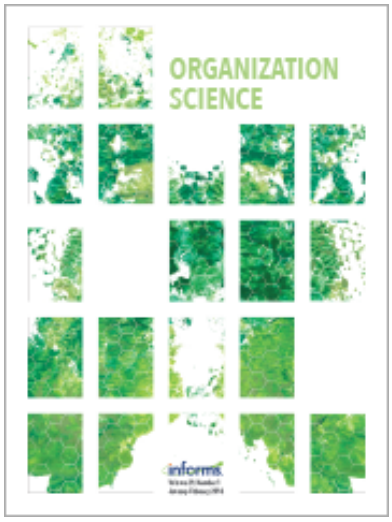

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Entrepreneurship and Gentrification

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Abstract. How do startups influence the neighborhoods in which they locate? Using data from the Greater London area, we find a positive association between growth-oriented entrepreneurship and both demographic and organizational changes in these communities. Older, less educated residents are replaced by younger, more educated ones. Restaurants become more expensive and more diverse. We also demonstrate that growth-oriented entrepreneurship predicts a subsequent rise in residential real estate prices. This price appreciation, however, does not seem to benefit long-term residents, as property values increase primarily in areas with high rates of renting. The gentrification of neighborhoods experiencing startup entry calls for deeper reflection on the role of entrepreneurship in inequality and the sustainability of entrepreneurial ecosystems.

Supplemental Material: The online appendix is available at https://doi.org/10.1287/orsc.2024.18920.

Keywords: entrepreneurship • gentrification • communities • inequality • real estate

Introduction story-telling

In 1990, Kendall Square, the neighborhood surrounding MIT, had relatively little to offer. It had only a handful of shops and restaurants. Many buildings sat vacant or underutilized, and it still had substantial tracts of undeveloped land. Few, other than students at MIT, chose to live there. Today, the area has been transformed. It offers trendy cafes and a plethora of dining options, with every cuisine from Afghani to Vietnamese. It bristles with startups, venture capital firms, research labs, and a vibrant energy. The square footage of developed space devoted to offices, residences, and retail has more than tripled.[1]

This metamorphosis has not been unique. Many neighborhoods around the world have experienced similar transformations: the East End of London, Friedrichshain-Kreuzberg (Berlin), Maboneng (Johannesburg), Venice Beach (Los Angeles), and Williamsburg (New York), to name a few. good question

What might account for these renewals? Much of the existing literature on gentrification has highlighted the importance of large-scale real estate projects or of improvements to the transportation infrastructure as an impetus for development (e.g., Smith 1996, Zuk et al. 2018). These projects have almost always involved government cooperation, if not intervention (Smith 1996, Hackworth 2007).

But the transformation of places like Kendall Square, the East End, and Maboneng feels different and more emergent. Although these neighborhoods have become hip, they have also become famous as centers of entrepreneurial ecosystems. Kendall Square has research institutes spawning ideas, startups pursuing them, and investors and professional service providers supporting those startups. Maboneng has galleries, studios, and a variety of shops, spaces, and organizations catering to innovation in arts and entertainment.

Although neighborhoods such as Kendall Square and the East End obviously attract entrepreneurs once they become hubs, we see compelling reasons why growth-oriented entrepreneurship might also initiate and propel neighborhood transformation: resource constraints mean that entrepreneurs might initially find lagging neighborhoods appealing for their lower rents. This influx of highly educated entrepreneurs and startup employees then raises the demand for a variety of local services: bars, cafes, boutiques, and eateries (e.g., Glaeser et al. 2001, Florida 2002). Those amenities, in turn, increase the attractiveness of these places for high-income consumers, not just those associated with the startups (e.g., Zukin et al. 2009, Zukin 2010, Hyde 2014).

We explore this possibility empirically by examining the relationship between growth-oriented entrepreneurship and neighborhood change within the city

does leadership matter: growth-oriented entrepreneurship

of London—an international hub for startup activity. We begin by descriptively documenting that neighborhoods with higher startup entry evolve in ways consistent with gentrification. Census data reveal that these places undergo demographic change: Older, less educated, blue-collar workers move out. Younger, more educated, white-collar employees replace them. Using restaurant data from Tripadvisor, we find evidence that startup activity also changes the character of the place. Restaurants in the neighborhood become more expensive and more cosmopolitan.

Finally, we examine the effect of growth-oriented entrepreneurship on property prices. Real estate prices serve as something of a summary statistic for the attractiveness of a neighborhood, capturing both its proximity to desirable jobs and its various amenities. These prices also have the attractive features of being continuous and readily available for many years, allowing us to employ tighter empirical designs. Startup activity in a neighborhood raises residential real estate values, particularly in places that begin with lower property prices. These results hold whether estimated with fixed effects, fixed trends, or using an instrumental variable.

Our results therefore provide systematic evidence that growth-oriented entrepreneurship contributes to gentrification processes. Growth-oriented startups create jobs, attracting people to the neighborhood. The amenities in these neighborhoods undergo an upgrading. The energy created by this combination of entrepreneurial activity and trendy retail and restaurants may then entice others to the neighborhood and stimulate further entrepreneurial and innovative activity (Bathelt et al. 2004, Storper and Venables 2004, Silver and Clark 2016). Growth-oriented entrepreneurial clusters may therefore represent a distinct modern form of gentrification, one more emergent and less centrally planned.

Despite its distinct origins, however, entrepreneurship-driven gentrification appears to share many of the same ills as other forms of neighborhood renewal. Incoming residents enjoy the ambiance and amenities. But in a pattern paralleling that of gentrification related to large-scale real estate developments (e.g., Smith 1996, Hwang and Ding 2020), the original residents of these places end up displaced and seeing little benefit from this urban renewal. One would hope that these former residents would at least benefit from the rising real estate prices. In London, however, neighborhoods experiencing the largest price appreciations typically had low levels of home ownership. Landlords, rather than former residents, captured most of the capital gains.

In this sense, the patterns we document at the microgeographic level revisit one of the tensions of high-growth entrepreneurship for cities. High-growth startups create jobs, often good jobs (Henrekson and Johansson 2010, Samila and Sorenson 2011, Haltiwanger et al. 2013). They therefore accelerate regional economic growth. But entrepreneurship simultaneously increases sorting and economic inequality (Sørensen and Sorenson 2007, Piketty 2014, Kwon and Sorenson 2023). Spatial sorting within cities may add to these disparities through both capital gains and differential access to amenities.

Startups and Gentrification

Ruth Glass (1964), a sociologist, first used the term "gentrification" to describe the transformation of working-class neighborhoods in London. She observed that middle-class professionals would buy up properties in these neighborhoods, renovating them and raising their value. Since then, a substantial, though mostly case study based, literature has documented and described these dynamics (e.g., Smith 1996, Weber 2002, Zukin 2010). On the positive side, neighborhoods undergoing gentrification often enjoy reduced crime rates, improved schooling, and accelerated local economic growth (e.g., Marcuse 1985, Papachristos et al. 2011, Davis and Oakley 2013, Palmer and Pathak 2017). These benefits, however, appear to come at a cost to the original residents of the neighborhood, who not only end up displaced but also losing their communities (e.g., Glass 1964, Smith 1996, Hwang and Ding 2020).

Scholars of gentrification have also long sought to understand what sets these transformations in motion (for a review, see Hwang and Lin 2017). Much of the existing literature has highlighted the role of capital infusions and municipal-level policy. Property developers, for example, often see potential in abandoned or underutilized factories and warehouses, purchase them, and turn them into lofts and offices (Smith 1979, Marcuse 1985, Freyd 2022). Zoning changes, tax incentives, and the upgrading of transportation infrastructure frequently help to attract these major investments (Hackworth 2007, Zuk et al. 2018, Chava and Renne 2022). But many recent transformations do not have obvious origins in any large-scale developments or municipal interventions (Hwang and Lin 2017). Instead, they appear to have emerged more naturally, without planning or central coordination.

Interestingly, many of these recently transformed neighborhoods sit at or near the heart of local entrepreneurial ecosystems. Consider, for example, Kendall Square, Venice Beach (Los Angeles), or Nørrebro (Copenhagen). Far from being mere coincidence, growth-oriented entrepreneurship—the establishment of businesses in manufacturing and tradable services—played a central role in initiating and catalyzing these transformations.

Because they are resource constrained, entrepreneurs often find lower-rent districts attractive. They

may repurpose old commercial or industrial buildings into functional yet affordable offices for their ventures. In this way, they benefit from being embedded in a thriving entrepreneurial ecosystem while maintaining a cost-effective footprint. An influx of growth-oriented entrepreneurship into a neighborhood might then transform it through at least three channels. First and foremost, entrepreneurship brings jobs to the neighborhood. Those jobs mean that more people spend time there. Second, having more people hanging out in a neighborhood increases its desirability as a place for interaction and raises the demand for services, such as retail and restaurants. Third, the entry of startups can also act as a signal, calling attention to the attractiveness of the place, not just to other entrepreneurs but also to established businesses and to potential residents. These dynamics all reinforce each other, creating a virtuous cycle of renewal.

Jobs

Startups stimulate local economies in part through the creation of jobs. Haltiwanger et al. (2013), for example, reported that young companies, those in their first year of operations, could account for more than 100% of all net job creation in the United States. Older firms, by contrast, tend to shed jobs. Subsequent studies have shown that similar patterns exist in most European countries (de Wit and de Kok 2014, Lawless 2014). Parallel research on the effects of venture capital on regional economies similarly points to the importance of startups as engines of job creation (Samila and Sorenson 2011).

In addition to the jobs created in these startups, growth-oriented firms also tend to stimulate the creation of additional jobs around them, at suppliers and distributors, and in other businesses (Moretti 2010, Kwon and Sorenson 2023). Moretti (2010), for example, estimated that firms in the tradable sector had an employment multiplier of around two, meaning that each job created in these firms stimulated the creation of roughly twice as many more in other parts of the economy. Although these multiplier effects may spill beyond the neighborhoods where entrepreneurial entry occurs, to the extent that they stem from demand by startups and their employees, much of it probably remains relatively local.

The influx of people into a place contributes to its culture and economic vitality in many ways. People working in the neighborhood spend time there during the day, interacting with those around them (e.g., Jacobs 1961, Bathelt et al. 2004, Storper and Venables 2004). Even if they live elsewhere, the convenience to the office may mean that they stay in the area in the evening. Many types of businesses also bring in other people who wish to exchange with them, those trying to sell to or partner with them, as well as those interested in jobs.

Amenities

Relative to other startups and even to more established firms, growth-oriented startups have younger and more educated employees (Ouiment and Zarutskie 2014, Ng and Stuart 2016). These highly educated and high-income professionals prioritize unusual experiences over mass-market offerings in their consumption of goods and services (Peterson 1992, Fishman and Lizardo 2013). These preferences represent an expression of their identity and operate as a signal of their beliefs (e.g., DellaPosta et al. 2015). Their arrival in the neighborhood can therefore shift demand toward trendier and more diverse offerings (Glaeser et al. 2001, Zukin 2010).

Florida (2002) has offered some of the most vivid and widely discussed accounts of this amenities effect on the ground. It may begin subtly—through a café opening on a quiet corner or an art gallery replacing an auto shop. Restaurants appear with trendier dishes and cuisines. Pubs, coffeeshops, and restaurants add outdoor seating areas. As high streets become populated with cafés that serve single-origin brews, gastropubs, and boutique clothing stores, they cultivate an ambiance of exclusivity and trendiness that attracts high-income consumers (Zukin et al. 2009).

An influx of startups can also influence the built environment. Entrepreneurs and small business owners care about the vitality and vibrancy of the neighborhoods where their businesses operate. Case studies have found that they organize and participate in efforts to upscale the community through urban planning and by participating in initiatives to renovate and revitalize historic properties (Brown-Saracino 2009, Zukin 2010). These transformed neighborhoods then become attractive destinations, not just for work but also for leisure, dining, and social gatherings (Oldenburg 1989).

Following Florida (2002), much of the research on these revitalizations has come in the form of case studies and has focused on the effects of creatives—artists, actors, and musicians—moving into a neighborhood (e.g., Zukin 2010, Hyde 2014). Growth-oriented entrepreneurs and their employees seem similar to these creatives in many ways. They are often young and well educated. Because they forgo pay in the short run for the hope of future gain (Hamilton 2000, Sorenson et al. 2021), they, too, tend to have higher social status and higher-brow tastes than their incomes alone would suggest. We therefore might expect startups and their employees to have similar effects in terms of stimulating the demand for high-end amenities. Consistent with this expectation, neighborhoods at the center of entrepreneurial ecosystems—such as

the East End and Venice Beach—also typically have dense concentrations of trendy restaurants and leisure activities (Sprinkle 2015, Audretsch et al. 2021).

Legitimacy

Startups can also serve as signals of the desirability of a neighborhood. A wave of new startups in an area can communicate to investors, developers, and city officials the up-and-coming status of a neighborhood. Entrepreneurs sometimes help to shape this narrative through their media campaigns (e.g., Brown-Saracino 2009). Just as storytelling plays a central role in conferring legitimacy to startups (Lounsbury and Glynn 2001), it also helps promote places (Weber 2002). When entrepreneurs tell compelling accounts about why they chose a particular place—often alluding to the authenticity or history of a neighborhood—they contribute to the recreation of its identity.

As the number of startups in a neighborhood grows, labels often get attached to these places, labels that allude both to the place and the types of firms clustered there. In Venice Beach, California, the neighborhood that has attracted so many tech startups and mainstays has become known as "Silicon Beach"; a little further south, the area in El Segundo where aerospace and space startups have clustered now often gets referred to as "Space Beach"; and the area around Shoreditch and Old Street in the East End of London has been tagged as "Silicon Roundabout." As with category labels, these place labels both serve as shorthand for a set of characteristics and a fuzzy boundary that defines the area and helps to reinforce the legitimacy of these locations as entrepreneurial ecosystems (Hsu and Hannan 2005, Romanelli and Khessina 2005).

Startups may see locating in these emerging and established areas as reinforcing to their own legitimacy as firms (Romanelli and Khessina 2005). Being associated with an accepted community of entrepreneurs eases access to employees, investors, customers, and other important resource providers (Stuart and Sorenson 2003, Romanelli and Khessina 2005). Space Tech companies, for example, find El Segundo attractive in part because investors, partners, and customers believe that startups in the space industry should locate there.

Autocatalysis and Agglomeration

These processes of job creation, amenity upgrading, and legitimation do not operate in isolation. Indeed, they interact in multiple ways. Jobs stimulate the demand for shopping and restaurants. Cafés and other "third places" in a neighborhood can, in turn, promote additional entrepreneurship by providing settings where would-be entrepreneurs can connect with cofounders, employees, and investors (Storper and Venables 2004, Currid 2007, Choi et al. 2024). Local legitimacy, meanwhile, can attract entrepreneurs to a place and can create spinoff dynamics, as employees of earlier startups found their own firms (Stuart and Sorenson 2003, Romanelli and Khessina 2005). Indeed, these processes seem almost autocatalytic.

Agglomeration, particularly the agglomeration of organizations engaged in producing similar types of goods and services, can even become its own source of attraction. Economists and economic geographers have long believed that firms benefit from being clustered with their peers (Marshall 1922). Geographic concentration can allow firms in an industry to share information, infrastructure, and specialized suppliers (Romer 1986, Saxenian 1994, Ellison et al. 2010). It also encourages employees to invest in building human capital specific to the industry (Rotemberg and Saloner 2000).

These processes even seem salient at relatively small spatial scales. Jaffee (2003), for example, found that law firms with locations more central to Silicon Valley survived longer. Even among advertising firms located in southern Manhattan, in New York City, productivity appears to decline with distance from Madison Avenue (Arzaghi and Henderson 2008). Across a broad set of industries, Andersson et al. (2016) estimated that the returns to colocation fall to nearly zero at a distance of only one kilometer. The fact that they span such short distances suggests that any advantages to agglomeration stem more from repeated (and probably serendipitous) information exchange than from sharing suppliers or a common labor pool (Sorenson 2023).

Growth-oriented entrepreneurs interested in gaining access to these agglomeration benefits may therefore prioritize in their choices of neighborhoods places where other startups engaged in similar activities have already located. As concentration itself becomes an attraction, these processes become even more strongly self-reinforcing.

Property Prices

As in other gentrification processes, these dynamics also influence property prices. They affect prices both through direct and indirect effects. Most directly, an increase in the availability of jobs in the neighborhood increases the value of residential real estate there (Alonso 1964), as well as in nearby neighborhoods. People prefer to spend less time commuting. Gibbons and Machin (2008), for example, found that people in London would pay roughly 4% more to reduce their commute by 10 minutes.

More indirectly, improvements in the amenities and ambiance of a neighborhood increase its attractiveness to other prospective residents also. Many studies, for example, have documented positive relationships between property prices and better public education

and reduced crime (e.g., Black 1999, Gibbons 2004, Linden and Rockoff 2008). Recent research has also demonstrated positive associations between prices and the quantity and quality of retail and restaurants in close proximity to a residential property (e.g., Albouy and Lue 2015, Kuang 2017).

When successful startups have liquidity events, those windfalls may also influence property prices through a wealth effect. Hartman-Glaser et al. (2023), for example, in a recent study of California-based companies, found that IPOs raised real estate prices in the areas immediately surrounding the headquarters of firms going public on the order of 5%–6% (see also Butler et al. 2019). But only a small proportion of startups ever experience an IPO, so this wealth channel probably plays only a partial role in any overall relationship between entrepreneurship and property prices.

Data

We investigate these processes using data on the greater London area. London has become a global hub for growth-oriented entrepreneurship, though more in high-value tradable services than in high tech. In 2021, the Global Entrepreneurship Network ranked it second, after Silicon Valley, in terms of the strength of its entrepreneurial ecosystem.[2]

Rather than being a place with a single center, Greater London represents a set of geographically proximate cities and towns that have expanded to meet each other. Still, this metropolitan area, which encompasses more than 600 square miles (1,570 square kilometers), has been defined as being a single labor market. It has the oldest subway system in the world, the Tube, and an extensive network of bus routes that allow for relatively easy movement across its entire expanse.

Given our interest in local communities, we would ideally use neighborhoods as the spatial unit of analysis. However, neighborhoods, though often understood by local residents, rarely have an official designation. People may also disagree on their boundaries. We therefore use the 2001 Census wards, an administrative area, as our spatial unit of analysis. In London, especially central London, many of these wards have their origins in the 19th century and designate places with central high streets—shopping districts—surrounded by residences.[3] They therefore often correspond closely to what local residents would perceive as their neighborhoods. Greater London has 649 wards; the sample that we use for estimation includes 633 of them.[4]

We compile our data set using information from multiple sources: Crunchbase, PitchBook, and VentureXpert provide data on startups and investing activities. TripAdvisor details the location and characteristics of restaurants. We use records from the 2001 and 2011 UK Census and the UK Business Registry to assess changes over time in neighborhood demographics and industry composition, and the H.M. Land Registry provides data on neighborhood housing prices.

Entrepreneurship

Our main measure of entrepreneurial activity comes from Crunchbase. Crunchbase, founded in 2007, has become one of the leading providers of information on private companies, particularly growth-oriented startups. It typically does not include entries for providers of local services, such as small shops, pubs, tailors, and hotels. For our purposes, it usefully includes both companies that have already raised financial capital and those bootstrapping or still in search of funding. It records information about the firm's location, available at the postcode level, the founding year, and a description of the firm's business.

We include in our analysis all private companies included in Crunchbase, founded between 2001 and 2016, with fewer than 50 employees and with postcode information that locates them in metropolitan London (see Online Appendix Table A.1 for an analysis of cases with missing data). We chose 2001 as the start year to limit the amount of retrospectively collected data contributing to our estimates and 2016 as the end year because our data source for house prices began to include commercial real estate after that date. We use the ONS National Postcode Directory (ONSDP) to allocate postcodes to 2001 Census wards.[5] In total, 6,419 firms met these criteria.

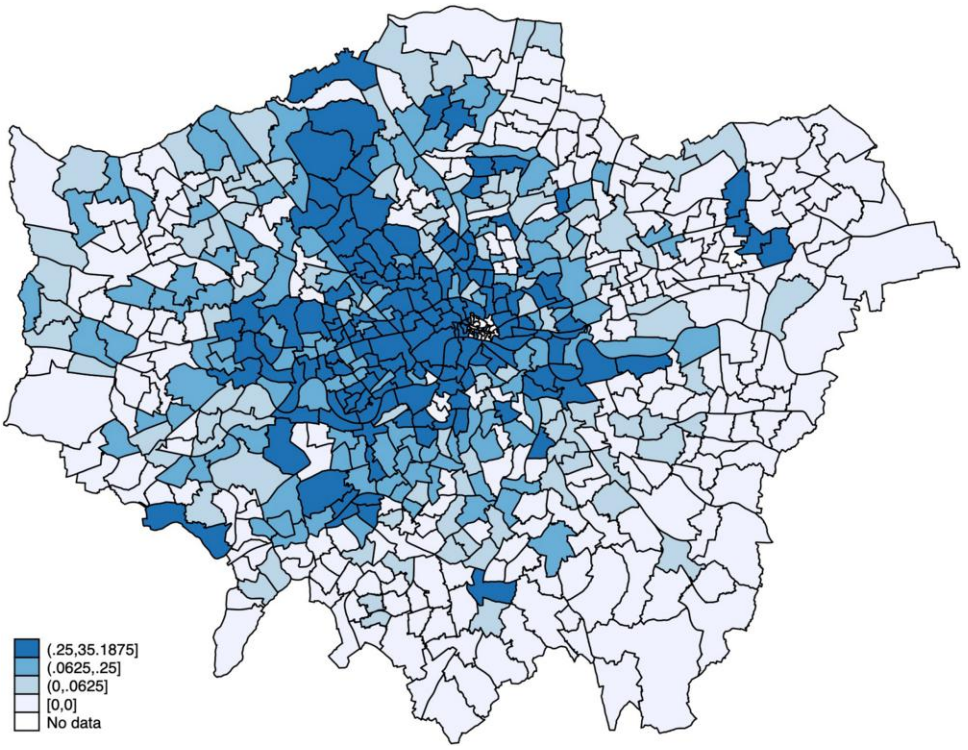
Table 1 reports the 10 most common types of startups, which account for almost 60% of the firms in the sample. These include high-tech and tradable services, such as financial services, e-commerce, information technology, app developers, data and analytics companies, internet services, and companies developing or using artificial intelligence.

Figure 1 plots the average number of growth-oriented startups per year over this period by neighborhood (ward). Darker colors indicate higher rates of entrepreneurship. Most new ventures appeared in the

Table 1. Top 10 Types of Firms

Business activity
Financial services
Commerce and shopping (also online)
Advertising services
Information technology
App developers
Data and analytics
Internet services
Publishing
Artificial intelligence
Education

Figure 1. (Color online) Average Number of Startups per Year by Ward, 2001 to 2016



western and northern parts of the city. East London has some hotspots: Hackney and Tower Hamlet, and farther away from the city center in the boroughs of Havering, Barking, and Dagenham. The southern part of the city also has some active areas: Lambeth, Southwark, and Wandsworth.

Our *entrepreneurship* measure sums the number of startups per neighborhood (ward) over three-year windows (i.e., companies founded in years $t-1$ to $t-3$). To examine the lag structure of these effects, we also construct counts of companies founded in years $t-2$ to $t-4$ and years $t-3$ to $t-5$.

The spatial scale of any effects remains an open question. People might commute from surrounding neighborhoods. Different types of amenities also vary in their catchment areas and, therefore, in the spatial scales of any effects that they might have. To explore the spatial scale of these effects, we aggregate counts in the surrounding neighborhoods (wards) in our *neighboring entrepreneurship* measure. We include these wards based on the distance of their centroids from the centroid of the focal ward. One measure includes all startups in surrounding wards within one kilometer of the focal ward, the other two include all those within three kilometers and five kilometers.

Crunchbase has the advantage of including companies that have not yet been funded. It therefore avoids a type of selection bias on successful startups. It nevertheless has a disadvantage in terms of being crowdsourced and therefore providing data of somewhat uncertain provenance. We therefore also constructed our main variable for entrepreneurship using VentureXpert data (which includes only startups that eventually receive venture capital). Although the two measures reflect somewhat different subsets of startups, they have a correlation coefficient of 0.76.

Outcomes

Demographics. We use the Census data for 2001 and 2011 to construct several measures: *Share of white-collar* employment calculates the proportion of people residing in a neighborhood employed in white-collar occupations, including managers, directors, senior officials, and professional and technical occupations. *Share of blue-collar* meanwhile calculates a similar ratio for those employed in manufacturing and less-skilled services (e.g., machine operators, leisure services). We also calculate ratios for the proportion of residents in various demographic segments: the *young* (18 to 34 years of age), *Black*, and those with *lower educational attainment* (International Standard Classification of Education (ISCED) levels 1, 2, and 3).

We use annual data from the Business Register, for the period 2001–2016, to look at the industry composition of employment within each neighborhood. We construct measures for the shares of employment in high- and low-tech manufacturing and in knowledge-intensive and other services.[6]

Restaurants. Tripadvisor allows us to document the location, type of cuisine, and menu prices for a large proportion of London restaurants. Although Tripadvisor does not record the opening and closing dates of restaurants, it does provide the exact dates of reviews. We explore temporal variation in the characteristics of restaurants within neighborhoods by assuming that restaurants opened in the year that they received their first review and closed in the year that they received their last one. To characterize the restaurants in a neighborhood, we constructed measures for the *share of medium- and high-priced restaurants* (based on the Tripadvisor categories) and the *share of ethnic restaurants* (those offering non-British cuisines).

creative way of measuring restaurants.

Real Estate Price Growth. Although the neighborhood demographics and restaurant characteristics allow us to explore gentrification most directly, property prices serve as a sort of summary statistic for the attractiveness of the neighborhood, both in terms of its proximity to jobs and in terms of the amenities it offers. Property prices, because of their fine-grained nature and because they afford us a long panel, also allow us to explore tighter empirical estimation strategies.

The H.M. Land Registry, which covers all property sales in England and Wales from 1995 to the present, records real estate prices. Each record reports the sale price from the transfer deed and the year in which the transaction took place, together with detailed geographic identifiers, including postcodes. We converted these prices to constant 2001 British pounds using the Retail Price Index (RPI). For the period covered in this study, records from the H.M. Land Registry primarily consist of residential properties sold at full market value.[7]

Figure 2 plots the average price appreciation from 2001 to 2016, by neighborhood (ward). Average real housing price growth during this period ranges from about 16%–28% per year in most neighborhoods. Although these averages may seem high, property prices more than quadrupled in London over this period.[8] Darker shades indicate places with greater price growth. Although the neighborhoods with the highest appreciation are scattered across the city, many of them are places that also had high rates of startup activity, shown in Figure 1.

In our models, we measure real estate price appreciation as the annual real growth in housing prices:

$$PriceGrowth_{j,t} = \left(\frac{AvgPrice_{j,t}}{AvgPrice_{j,t-1}} - 1 \right), \qquad (1)$$

where j indexes wards and t denotes years, and where the average prices have first been adjusted for inflation by dividing them by the RPI.[9] Although this measure accounts for inflation, it does not adjust for potential year-to-year quality variation in the properties being sold (cf. Case–Shiller Index). Table 2 reports

Figure 2. (Color online) Average Annual Growth in Housing Prices by Ward, 2001 to 2016

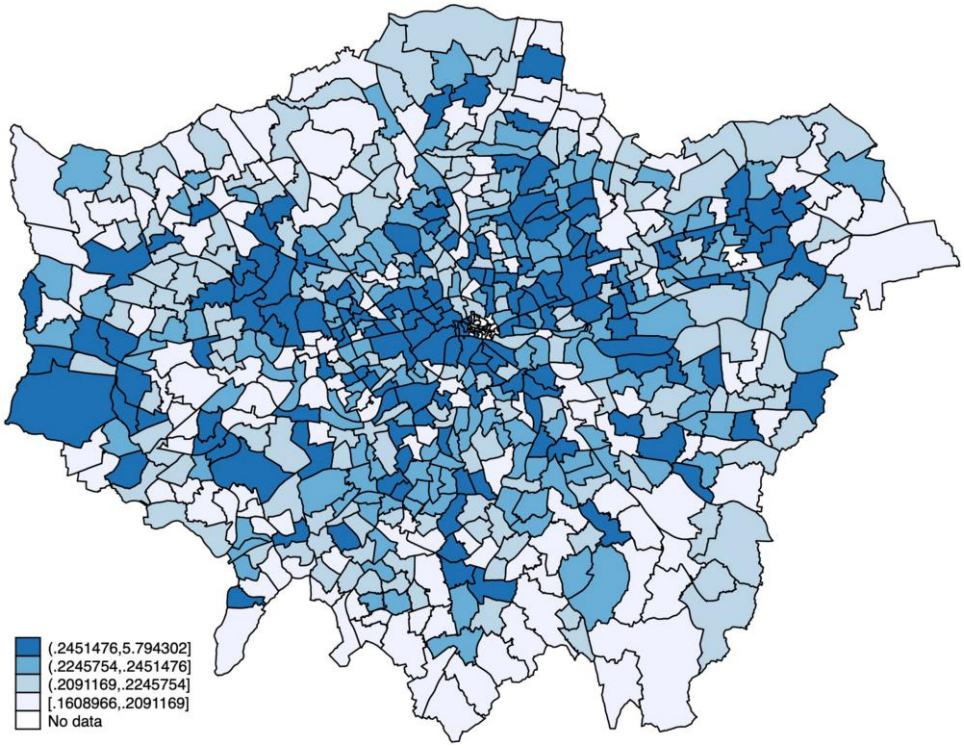


Table 2. Descriptive Statistics

Variable	*N*	Mean	Standard deviation	Min	Max
Share White Collar	1,262	0.500	0.146	0.213	0.895
Share Blue Collar	1,262	0.283	0.103	0.040	0.568
Share Young (18–34)	1,262	0.453	0.080	0.275	0.768
Share Black	1,262	0.114	0.097	0	0.547
Share Low Education	1,262	0.569	0.142	0.132	0.873
Share High-Tech Manufact.	10,096	0.003	0.009	0	0.151
Share Low-Tech Manufact.	10,096	0.021	0.036	0	0.626
Share Knowledge-Intens. Serv.	10,096	0.174	0.116	0	0.806
Share Other Services	10,096	0.699	0.130	0.128	0.974
Share Med-High Priced Restaurants	10,128	0.157	0.329	0	1
Share Ethnic Restaurants	10,128	0.221	0.400	0	1
Price Growth	10,128	0.250	0.838	−0.896	24.306
Share Homeowners (2001)	10,096	0.580	0.204	0.010	0.944
Entrepreneurship $(t-1; t-3)$	10,128	1.532	8.281	0	204
Entrepreneurship $(t-2; t-4)$	10,128	1.333	7.210	0	192
Entrepreneurship $(t-3; t-5)$	10,128	1.123	6.057	0	164
Entrepreneurship VE $(t-1; t-3)$	10,128	0.313	2.072	0	41
Entrepreneurship (1 km)	10,128	0.074	1.504	0	76
Entrepreneurship (3 km)	10,128	1.594	8.438	0	138
Entrepreneurship (5 km)	10,128	4.326	15.026	0	188

Notes. Demographic variables, the shares of *White Collar*, *Blue Collar*, *Young*, *Black*, and *Low Education* come from the UK Census (available for 631 wards for the years 2001 and 2011). Variables on the neighborhood industry composition, the shares of *High-tech Manufacturing*, *Low-tech Manufacturing*, *Knowledge-Intensive Services*, and *Other Services* are available annually, from 2001–2016, for 631 wards from the business registry. Restaurant data, used to construct the shares of *Med-High Priced Restaurants* and *Ethnic Restaurants* for 633 wards for 2001–2016, come from Tripadvisor. Data from the Land Registry, available for 633 for 2001-2016, are used to construct *Real Price Growth* and *Share Homeowners (2001)*. We use Crunchbase to build *Entrepreneurship* $(t-1; t-3)$, *Entrepreneurship* $(t-2; t-4)$, *Entrepreneurship* $(t-3; t-5)$, *Entrepreneurship (1 km)*, *Entrepreneurship (3 km)*, and *Entrepreneurship (5 km)*, and VentureXpert for *Entrepreneurship VE* $(t-1; t-3)$.

descriptive statistics for the variables used in our analysis.[10]

Neighborhood Change

We begin by analyzing the partial correlations between entrepreneurship and neighborhood changes that would seem indicative of gentrification. Each column estimates the share of some demographic measure regressed on logged entrepreneurship with neighborhood and year fixed effects:

$$Y_{j,t} = \beta \sum_{t-3}^{t-1} Entrepreneurship_{j,t} + \gamma_j + \tau_t + \epsilon_{j,t} \quad (2)$$

where Y represents the outcome variable of interest, γ denotes a vector of indicator variables for each neighborhood (ward), and τ indicates a dichotomous variable for the year 2011.

Table 3 reports the results of these regressions. Columns (1) and (2) report the relationships to the share of white- and blue-collar jobs. Columns (3) and (4) detail the partial correlations between entrepreneurship and the share of young people and Black residents, respectively. The final column estimates the relationship between entrepreneurship and the share of less-educated residents in the neighborhoods.

Higher rates of growth-oriented entrepreneurship in a neighborhood predict future shifts toward having more white-collar employees as residents, having more educated residents, and having a smaller proportion of Black residents. A one-standard-deviation increase in

Table 3. Entrepreneurship and Neighborhood Demographic Composition

DV: *Demographic shares*	*White Collar*	*Blue Collar*	*Young (18–34)*	*Black*	*Low Educ*
Entrepreneurship $(t-1; t-3)$	0.0018**	−0.0016**	0.0013**	−0.0008**	−0.0007*
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Neighborhood FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	1,262	1,262	1,262	1,262	1,262

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 631 neighborhoods (wards) observed in 2001 and 2011. The dependent variables are the shares of people with white-collar jobs (column (1)), blue-collar jobs (column (2)), aged 18–34 years old (column (3)), Black (column (4)), and with lower educational attainment (ISCED levels 1, 2, and 3 (column (5)). Our independent variable of interest sums the number of firms founded in the ward between $t-1$ and $t-3$. DV, dependent variable; FE, fixed effects.

*$p < 0.05$; **$p < 0.01$.

Table 4. Entrepreneurship and Neighborhood Industry Employment

DV: *Employment shares*	*High-tech Man.*	*Low-tech Man.*	*Know-intensive Serv.*	*Other Serv.*
Entrepreneurship $(t-1; t-3)$	0.00002**	−0.00007*	0.0007**	−0.00055**
	(0.000)	(0.000)	(0.000)	(0.000)
Neighborhood FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	10,096	10,096	10,096	10,096

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 631 neighborhoods (wards) observed from 2001 to 2016. The dependent variables, constructed using the classifications developed by the UK Office for National Statistics (UK-ONS), are the shares of people employed in high-tech manufacturing industries (column (1)), low-tech manufacturing industries (column (2)), knowledge-intensive services (column (3)), and other services (column (4)). Our independent variable of interest sums the number of firms founded in the ward between $t-1$ and $t-3$.
*$p < 0.05$; **$p < 0.01$.

effect sizes?

entrepreneurship over the preceding three years predicts a roughly 1.5-percentage-point shift from blue-collar to white-collar and from old to young, and about 0.7-percentage-point reductions in the proportions of Black and less educated residents. Given that the average ward has a workforce of roughly 4,500 and a population of nearly 13,000, these shifts in the neighborhood demographic composition almost certainly involve more individuals than directly employed in these startups.

We next explore the associations between entrepreneurship and a number of annual measures of neighborhood composition using a similar estimation approach, but now including a full set of year fixed effects (τ in Equation (2)).

Table 4 examines changes in industry employment. Consistent with London's specialization in tradable services, startup activity predicts larger increases in the share of individuals employed in knowledge-intensive services (column (3)) than in high-tech manufacturing (column (1)). These increases in share appear to come at the expense of low-tech manufacturing and other types of services (columns (2) and (4)), such as retail, restaurants, and personal services.

In Table 5, we explore the relationship between entrepreneurship and the types of restaurants found in each neighborhood. Columns (1) and (2) reveal that startup activity in the neighborhood predicts increases in the shares of medium- to high-priced restaurants and of restaurants serving ethnic cuisines. A one standard deviation increase in startup activity over the preceding three years predicts a 1.1-percentage-point rise in the share of higher-priced restaurants. It has an even stronger relationship with restaurant variety. The same increase in startup activity predicts a 2.7-percentage-point rise in the share of ethnic restaurants. The character of the neighborhood, at least as measured by restaurants, appears to change even more rapidly than its demographic composition.

Table 5. Entrepreneurship and Neighborhood Restaurants

DV: *Restaurant shares*	*Med-high price*	*Ethnic*
Entrepreneurship $(t-1; t-3)$	0.0013*	0.0032**
	(0.001)	(0.001)
Neighborhood FE	Yes	Yes
Year FE	Yes	Yes
Observations	10,128	10,128

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 633 neighborhoods observed between 2001 and 2016. The dependent variables are the shares of medium- to high-priced restaurants (column (1)) and of ethnic restaurants (column (2)). Our independent variable of interest sums the number of firms founded in the ward between $t-1$ and $t-3$.
*$p < 0.10$; **$p < 0.01$.

Real Estate Prices

Having provided a descriptive account of demographic and organizational changes at the neighborhood level consistent with gentrification, we now turn to an examination of the relationship between growth-oriented entrepreneurship and property prices.

Fixed Effects and Fixed Trends

In Table 6, we regress real housing price appreciation on entrepreneurship, incorporating neighborhood and year fixed effects:

$$PriceGrowth_{j,t} = \beta \sum_{t-3}^{t-1} Entrepreneurship_{j,t} + \gamma_j + \tau_t + \epsilon_{j,t} \quad (3)$$

where γ denotes a vector of indicator variables for each neighborhood (ward), and τ represents a set of indicator variables for each year. Most of the remaining models then explore variations on this baseline specification.

Across all models, entrepreneurship in a neighborhood predicts subsequent appreciation in residential real estate prices in that neighborhood. Column (1), for example, suggests that each startup raises the expected annual real estate price appreciation by 1.2 percentage points.[11] Columns (2) and (3) explore the lag structure. Whereas our measure of entrepreneurship in our baseline specification sums the number of new firms in a neighborhood between $t-1$ and $t-3$,

Table 6. Entrepreneurship and House Price Growth (Fixed Effects)

DV: *Real price growth*	(1)	(2)	(3)	(4)	(5)
Entrepreneurship $(t-1; t-3)$	0.012**			0.014**	
	(0.004)			(0.006)	
Entrepreneurship $(t-2; t-4)$		0.013**			
		(0.004)			
Entrepreneurship $(t-3; t-5)$			0.014**		
			(0.005)		
Entrepreneurship VE $(t-1; t-3)$					0.030*
					(0.012)
Neighborhood FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Neighborhood FT	No	No	No	Yes	No
Observations	10,128	10,128	10,128	10,128	10,128

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 633 neighborhoods observed from 2001 to 2016. The dependent variable is annual growth in housing prices. The independent variable sums the number of firms in Crunchbase founded between $t-1$ and $t-3$ in columns (1) and (4), between $t-2$ and $t-4$ in column (2), and between $t-3$ and $t-5$ in column (3). Column (5) replicates the same specification as in column (1) using the number of firms in VentureExpert founded between $t-1$ and $t-3$.

*$p < 0.05$; **$p < 0.01$.

columns (2) and (3) of Table 6 use the intervals $(t-2; t-4)$ and $(t-3; t-5)$, respectively. Competing forces may act on these longer lags. On the one hand, as time progresses, more and more of these startups fail, which should weaken any price effect. On the other hand, those that survive typically expand, which could strengthen the price effect. Given that the magnitude of the estimated coefficients remains consistent across specifications, it appears that neither of these effects dominates.

Column (4) then introduces neighborhood-specific fixed trends (reported as Neighborhood FT in the table):

$$PriceGrowth_{j,t} = \beta \sum_{t-3}^{t-1} Entrepreneurship_{j,t} + \gamma_j + \delta_j t + \tau_t + \epsilon_{j,t} \quad (4)$$

where δ_j represents a neighborhood-specific linear trend. Because our baseline specification uses changes as a dependent variable, the neighborhood fixed effects in the first three models already capture differences in the average price trends across neighborhoods—similar to using fixed trends in an analysis of price levels. In other words, each ward has its own baseline price growth rate for the period. The addition of a trend term therefore captures *nonlinear* trends, neighborhood-specific acceleration or deceleration in price appreciation.

Column (5) finally replicates the specification in column (1) with a measure of entrepreneurship constructed from VentureXpert data rather than from Crunchbase. VentureXpert only includes firms that receive venture capital investment. We use the founding dates, rather than the funding dates, for including these firms in our entrepreneurship measure. Most of these firms, therefore, have not yet been funded or have only received small investments (less than one million pounds).

Because inclusion in VentureXpert selects on having enjoyed some degree of success, we would expect the average venture-backed startup to have a larger effect on its neighborhood. Indeed, it does. The measure based on VC-backed startups produces substantially larger point estimates. But because of their small numbers, they represent only a portion of the total effects of growth-oriented entrepreneurship. Whereas a one-standard-deviation increase in the number of startups over the previous three years predicts a roughly 10-percentage-point increase in real estate prices, the same one-standard-deviation increase in the number of startups receiving venture capital predicts only a six-percentage-point increase.

Table 7 explores the spatial scope of this price effect by estimating the extent to which these effects spill over to nearby neighborhoods. These estimates also provide a check on whether our analysis adopts an appropriate spatial unit. Although we treated wards as semi-independent neighborhoods, if these areal units represent more of an administrative convenience than a contiguous community, then the effects of entrepreneurship might cross the borders of these regions. We regress our measure of real estate price appreciation in a neighborhood on entrepreneurship in nearby wards, with centers within one kilometer, three kilometers, and five kilometers from the focal neighborhood (columns (1), (2), and (3), respectively). The effect of entrepreneurship on real estate prices dissipates rapidly with distance. We cannot distinguish the effects of entrepreneurship in neighboring areas from zero.

Effects by Price Decile

To explore further the relationship between house prices and entrepreneurship, we examine whether the

Table 7. Spatial Spillovers in Entrepreneurship and House Price Growth

DV: *Real price growth*	*1 km*	*3 km*	*5 km*
Entrepreneurship $(t-1; t-3)$	0.012**	0.013**	0.012**
	(0.004)	(0.004)	(0.004)
Entrepreneurship (1 km)	−0.009		
	(0.009)		
Entrepreneurship (3 km)		−0.002	
		(0.002)	
Entrepreneurship (5 km)			0.000
			(0.001)
Neighborhood FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	10,128	10,128	10,128

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 633 neighborhoods observed from 2001 to 2016. The dependent variable is the annual growth in housing prices. Neighboring entrepreneurship measures the number of startups founded in the last three years in neighborhoods with centroids one kilometer (column (1)), three kilometers (column (2)), or five kilometers (column (3)) away from the centroid of the focal ward.

**$p < 0.01$.

effect of firm entry varies across the distribution of initial prices. Columns (1) and (2) of Table 8 focus, respectively, on the bottom 10% and top 10% of neighborhoods in terms of housing price levels in 2001. Entrepreneurship has a nine times stronger association with housing price growth in neighborhoods that had been in the bottom 10% of the housing price distribution in 2001 relative to neighborhoods in the top 10%. Columns (3) and (4) widen the bands to being the bottom 20% and top 20% neighborhoods, with similar results. Price appreciation therefore appears highly concentrated among neighborhoods that had been cheaper prior to our observation window.

Instrumental Variable Estimation

Although conceptually the relationship between entrepreneurship and real estate prices could run in the opposite direction—home equity, for example, might provide financial capital for would-be entrepreneurs (Kerr et al. 2022, Leth-Petersen et al. 2022)—the lagging of the entrepreneurship variable should help to exclude reverse causality as a confound. The primary threat to a causal interpretation of our fixed effects and fixed trends estimates therefore comes from the possibility that unobserved neighborhood characteristics influence both entrepreneurship and real estate prices. For example, the addition of a bus route or an improvement in local schools might increase the attractiveness of a neighborhood for both businesses and residents.

To address this issue, we estimated the effects of entrepreneurship on real estate prices using an instrumental variable. We propose a novel instrument that exploits the effect of a major tax reform, in 2010, on the Enterprise Investment Scheme (EIS). The EIS, originally introduced in 1994, allows individual investors to deduct 30% of up to one million pounds per year in investments in private companies against income. It also exempts them from capital gains on shares held at least three years.[12] In 2010, the United Kingdom increased its top marginal tax rate from 40% to 50% and its capital gains tax for high-income individuals from 18% to 28%. These changes made both the short-term deduction of the EIS from income and its long-term exemption from capital gains tax far more attractive, encouraging investors to invest more in startups. In the first year after the change, angel investments raised through the EIS surged by 87%.[13]

To build our instrument, we first identified all investors who made EIS-related investments in London and mapped the geography of their investments across neighborhoods from 1991 to 2001 (i.e., before our period of analysis).[14] We then interact the number of deals per neighborhood conducted by these investors before 2001 with a dummy variable (*Tax Reform*) set to one after 2010:

$$IV_{j,t} = \left(\sum_{s=1991}^{2001} EIS_j \right) \times \text{Tax Reform}_t. \quad (5)$$

The instrument has two components: an exogenous shock associated with the tax change and a nonrandom

Table 8. Entrepreneurship and House Price Growth Across Price Quantiles

DV: *Real price growth*	Bottom 10%	Top 10%	Bottom 20%	Top 20%
Entrepreneurship $(t-1; t-3)$	0.053**	0.006**	0.047*	0.007**
	(0.018)	(0.002)	(0.019)	(0.002)
Neighborhood FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,024	1,008	2,032	2,016

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 64 neighborhoods observed from 2001 to 2016 in column (1), 63 in column (2), 127 in column (3), and 126 in column (4). The dependent variable is the annual growth in housing prices. The independent variable sums the number of firms founded in the ward between $t-1$ and $t-3$.

*$p < 0.05$; **$p < 0.01$.

Table 9. Entrepreneurship and House Price Growth (Instrumental Variable)

	Second stage *Real price growth*	First stage *Entrepreneur* $(t-1; t-3)$
Entrepreneurship $(t-1; t-3)$	0.015*	
	(0.006)	
EIS Instrument		3.844**
		(0.495)
Neighborhood FE	Yes	Yes
Year FE	Yes	Yes
Observations	10,128	10,128
Kleibergen–Paap rk Wald *F*-statistic		60.37

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 633 wards observed from 2001 to 2016. *Real price growth* is the annual growth of housing prices. The endogenous variable, *Entrepreneurship* $(t-1; t-3)$, sums the number of firms founded in the ward between $t-1$ and $t-3$. The *EIS Instrument* uses information on the geography of EIS investors before 2001 interacted with an indicator variable for the introduction of the 2010 tax reform.
*$p < 0.05$; **$p < 0.01$.

component based on the geography of investors already involved in EIS-related investments. Because these portfolios had been chosen a decade before the exogenous shock, their composition should not pose a threat to identification. Indeed, the neighborhood fixed effects—effectively fixed trends—included in our regressions should absorb the effects of any neighborhood characteristics related to the nonrandom component of the instrument as well as any preshock linear price trends.[15]

Table 9 reports results for this IV specification. Consistent with the logic underlying the instrument, the first stage reveals a strong partial correlation between the instrument and the endogenous variable (entrepreneurship). The *F*-statistic for the first stage also suggests that the relationship has sufficient strength to eliminate most of the bias in the endogenous variable. The estimates from the second stage indicate price effects roughly equivalent in magnitude to those estimated in the fixed effects and fixed trends analyses, suggesting that the fixed effects regressions may exhibit little omitted variable bias.

Capital Gains

Although much of the literature on gentrification has portrayed these transformations as problematic, disrupting communities, in a purely financial sense, who gains and who loses depends also on who owns the properties as they rise in value. If the older, blue-collar residents being replaced by younger, white-collar ones had owned their houses, they may enjoy substantial capital gains from rising real estate values.

Our data do not allow us to measure home ownership at the household level. But we can gain some insight into this question by examining the effect of entrepreneurship on real estate prices as a function of the distribution of home ownership in 2001.

Table 10 reports models for neighborhoods in the bottom and top 10% (columns (1) and (2)) and in the bottom and top 20% (columns (3) and (4)) of home ownership. Those in the bottom 10% have an average ownership share of about 22%, whereas those in the top have levels in excess of 85%. The effect of entrepreneurship on housing prices appears most consistent in neighborhoods at the lower end of the ownership share distribution, in other words, places where most people rent. Given the low ownership rates in these places, those leaving these neighborhoods probably did not benefit from the capital gains associated with rising real estate prices. More likely, they left because they could not afford the rent anymore.

Discussion

In neighborhoods around the world, places once downtrodden and underdeveloped have reemerged as entrepreneurial hubs. Kendall Square, the East End, and Venice Beach all come to mind. We argue that urban renewal through growth-oriented entrepreneurship represents a distinct form of gentrification. Entrepreneurship contributes to neighborhood transformation through multiple channels. Startups create jobs. They bring people into the neighborhood. Those people increase the demand for retail and restaurants, as well as pubs and parks, which can attract even more people to the neighborhood.

Table 10. Entrepreneurship and House Price Growth for Neighborhoods with Highest/Lowest Ownership

DV: *Real price growth*	Bottom 10%	Top 10%	Bottom 20%	Top 20%
Entrepreneurship $(t-1; t-3)$	0.008*	0.031	0.009*	−0.015
	(0.004)	(0.021)	(0.004)	(0.015)
Neighborhood FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,024	1,008	2,032	2,016

Notes. Standard errors clustered at the neighborhood level in parentheses. The sample includes 64 neighborhoods observed over the period 2001–2016 in column (1), 63 in column (2), 127 in column (3), and 126 in column (4). The dependent variable is the annual growth in housing prices. The independent variable sums the number of firms founded in the ward between $t-1$ and $t-3$.
*$p < 0.05$.

London has provided an interesting setting for our empirical study, just as it did in some of the original research on gentrification (Glass 1964). In addition to being one of the most prominent entrepreneurial ecosystems in the world, London has a number of similarities to other global cities: startup activity clusters within the city, the neighborhoods where they cluster feel unusually hip, and much of its growth-oriented entrepreneurship happens in high-tech and tradable services. Yet London also represents but a single case, with its own idiosyncrasies.

We provide systematic evidence for a positive relationship between growth-oriented entrepreneurship and gentrification in London. Entrepreneurship predicts demographic shifts in these neighborhoods. Older, blue-collar residents leave. Those replacing them are younger, more educated, and more commonly have a white-collar job. Restaurants in the neighborhood also become more expensive and more diverse as more startups enter.

Real estate prices help us to document the net effects of these changes more precisely. On average, each startup predicts a 1.2-percentage-point increase in real property price appreciation over the subsequent three years. Growth-oriented entrepreneurship predicts even stronger price appreciation in neighborhoods that begin with relatively depressed property prices. Over time, these differences compound. One might worry that these effects stem from some common cause—that trendy places, for example, attract both entrepreneurs and residents—but these results hold even when we estimate the effects using an instrumental variable.

These benefits might tempt politicians and urban planners to promote growth-oriented entrepreneurship. These transformations, however, do not come without costs. As in other cases of gentrification, the benefits have not been evenly distributed. Rising rents appear to force out longstanding residents and older businesses. Even those who can afford to stay may find themselves missing the old community and that the ethnic restaurants and high-end shopping favored by those moving into the neighborhood do not appeal to them (Smith 1996, Zukin 2010, Hwang and Ding 2020).

The original residents of these places do not even appear to benefit from the capital gains. Although real estate ownership offers a plausible channel for spreading the returns to gentrification, at least in London, the price appreciation appears to have accrued more to landlords than to residents.

Our results therefore provide additional channels through which entrepreneurship creates a tension between economic growth and economic inequality. Growth-oriented entrepreneurship creates jobs and wealth (Henrekson and Johansson 2010, Samila and Sorenson 2011, Haltiwanger et al. 2013). But the value created ends up being highly concentrated, leading to rising income inequality (Atems and Shand 2018, Feldman et al. 2021, Kwon and Sorenson 2023). Spatial sorting within cities potentially adds another dimension to these disparities. Those in the entrepreneurial and professional classes enjoy local amenities and may benefit economically not just from their incomes and equity stakes in their companies but also from real estate capital gains.

Our research nevertheless offers more of an introduction to gentrification through growth-oriented entrepreneurship than a conclusion. We see ample room for additional research on this topic. One useful path might focus on individual-level information. Our data do not allow us to say with any certainty who benefits from these revitalizations. Do the jobs created go to those already residing in the neighborhood? Do these jobs produce benefits on other margins, such as reducing commute times? Understanding the potential costs to those leaving these renewed neighborhoods similarly requires information on where these people went. How do their destination neighborhoods compare with the one that they left?

Another research path would pursue designs that compare across cities that have experienced varying degrees of gentrification through growth-oriented entrepreneurship. One of the open questions in our analysis concerns the net effects of these urban renewals. Do they improve the city as a whole, or do they simply represent a shifting of economic activity from one place to another? Even if they simply shift activity, cities might still benefit from gentrification if the process reduces disparities across neighborhoods in amenities broadly construed—not just proximity to bars and bistros but also access to jobs, education, clean air and water, and physical security.

It also seems worthwhile to examine further the relationship between property prices and entrepreneurship. Although rising property prices appear positive, they can also become a problem (cf. Kerr et al. 2022, Leth-Petersen et al. 2022). Silicon Valley has gained recognition not only as a hub of entrepreneurship and innovation but also as the most expensive place to live in the United States.[16] Rising real estate prices and personnel costs in high-tech hubs raise the costs for all employers. In a dynamic similar to the Dutch disease, this "Silicon Valley syndrome" reduces the competitiveness of manufacturing and tradable services, leaving these economies polarized between rich and poor, increasingly fragile, and concentrated on the high-tech sector (Kwon and Sorenson 2023). Rising property prices may also prevent the entry of the next generation of entrepreneurs, potentially leading to a reduction in the future economic dynamism of the region.

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Endnotes

[1] This is according to data available from the Cambridge Redevelopment Authority.

[2] See www.startupgenome.com for the full list of ranked regions and for more details about these rankings.

[3] Wards also serve as the building blocks of the UK administrative geography, used to elect local government councilors in the London boroughs.

[4] In the City of London, the center of the downtown business district, many wards have few housing units and fewer sales, meaning that we could not observe annual changes in housing prices for 16 of these wards.

[5] The ONSPD maps both current and defunct postcodes in the United Kingdom to a range of spatial units.

[6] We use the classifications developed by the UK Office for National Statistics (UK-ONS). For more details, see https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/compendium/economicreview/april2018/examiningregionalgrossvalueaddedgrowthintheuk1998to2016.

[7] Since October 2013, the H.M. Land Registry has also documented transfers under a power of sale/repossessions, buy-to-lets, and transfers to nonprivate individuals.

[8] These averages also report arithmetic means. Because of the high volatility in price growth, particularly at the ward level, these means far exceed the compound average growth rate (i.e., the geometric mean).

[9] Despite being annual figures, our measure also adjusts for when these sales occur within a year by dividing each sale price by a monthly seasonal price index, centered at one, before averaging over the year.

[10] The price growth variable has a fat and extended right tail. These extreme values come from areas in the City of London that had office-to-residential conversions and luxury developments between 2001 and 2016 (e.g., Queenhithe riverside, Aldgate/Portsoken). Although these unusually large housing price increases may capture genuine gentrification processes, they may also reflect the limited number of residential transactions within the city prior to these developments. To test the sensitivity of our results to these cases, we performed several robustness checks. In particular, we reestimated our baseline regression, trimming the top and bottom 0.5% and 1% of the housing price distribution and excluding wards identified as potential outliers. The results remain qualitatively consistent with our main finding, though somewhat smaller in magnitude.

[11] Our results remain consistent when we control for the neighborhood industry composition (Table A.3 in the Online Appendix).

[12] For more information on the EIS, see https://www.gov.uk/guidance/venture-capital-schemes-apply-for-the-enterprise-investment-scheme.

[13] This is according to the December 13, 2013, H.M. Revenue & Customs report, "Enterprise Investment Scheme Statistics."

[14] We identify EIS investors through the description of each deal in PitchBook. We consider a person an EIS investor if at least one transaction includes one of the following keywords: *enterprise investment scheme*, *EIS*, *seed enterprise investment scheme*, and *SEIS*. This approach identified 39 investors with 2,884 investments in London prior to 2001.

[15] Our instrument has a shift-share structure, similar to that of a Bartik-style instrumental variable (Bartik 1993, 2015). Although the shares have not been randomly assigned, causal identification comes from the plausible exogeneity of the shift, the tax reform (Borusyak et al. 2022).

[16] Zillow data (available at https://www.zillow.com/research/data/) identify San Jose as the most expensive Metropolitan Statistical Area, followed by San Francisco.

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