What Have We Learned About the Causes of Recent Gentrification?

Jackelyn Hwang
Princeton University

Jeffrey Lin
Federal Reserve Bank of Philadelphia

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Abstract

Since 2000, increased gentrification in an expanding section of cities and neighborhoods has renewed interest from policymakers, researchers, and the public in the causes of gentrification. The identification of causal factors can help inform analyses of welfare, policy responses, and forecasts of future neighborhood change. We highlight some features of recent gentrification that popular understandings often do not emphasize, and we review progress on identifying some causal factors. A complete account of the relative contribution of many factors, however, is still elusive. We suggest questions and opportunities for future research.

Introduction

The gentrification of neighborhoods in U.S. central cities has attracted notice since at least the 1970s. Since 2000, however, greater changes in an expanding section of cities and neighborhoods have renewed interest from policymakers, researchers, and the public in the causes and consequences of gentrification. Many central-city neighborhoods have seen increased investment and housing prices, stabilized tax bases, improvements in amenities, dramatic shifts in cultural and demographic characteristics, and an influx of new residents of higher socioeconomic status (SES). Questions about residential, cultural, social, and political displacement have accompanied these changes. Is recent gentrification different from earlier instances in the 1970s and 1980s? How costly or beneficial are these shifts in the internal structure of cities to households, firms, and

society? Which households benefit and which ones lose as neighborhoods turn over? What are the likely consequences of policies intended to mitigate or slow the pace of gentrification? Will the recent gentrification of U.S. central cities revert, persist, or expand further, eventually inverting the dominant 20th-century pattern of rich suburbs and poor central cities?

An understanding of the causes of recent gentrification can inform answers to these questions. For example, the relative importance of supply and demand for neighborhood housing and amenities may have implications for policies intended to slow the pace of gentrification. If gentrification is primarily caused by an increase in the supply of housing, then restrictions on such supplies might effectively mitigate some of the negative consequences for existing residents. If gentrification is primarily caused by an increase in the demand for amenities, however, then development restrictions may perversely amplify housing price increases and subsequent displacement effects. An understanding of the changes in the geography of jobs or amenities can help us understand gentrification's consequences for commuting and consumption by low- and high-income households. Another example is that the relative importance of temporary policies, unstable amenities, durable factors, or changes in tastes may help policymakers, households, and businesses forecast future neighborhood changes.

A main challenge for understanding the relative importance of the causes of recent gentrification is the tendency for endogenous factors to reinforce neighborhood change. Just as development activity might attract new residents of higher SES, those residents may subsequently attract new retail stores and employers and also more new residents of higher SES. Very strong responses in endogenous factors to small initial causal factors can potentially further increase neighborhood status, creating a self-sustaining cycle for gentrifying neighborhoods. Although we may be able to make progress on understanding the proximate causes of gentrification, it may be more difficult to uncover deep, fundamental factors.

In this article, we first highlight some features of recent gentrification that popular understandings of gentrification often do not emphasize to provide background for our subsequent discussion. Then, we survey recent progress on understanding the causes of gentrification in U.S. cities since 2000, focusing on four papers presented at the 2016 Research Symposium on Gentrification and Neighborhood Change. (Other articles in this symposium of *Cityscape* focus on characterizing recent gentrification and understanding the consequences of gentrification.) Although some progress has been made in identifying some causal factors, we still do not have a complete account of the relative contribution of many factors. We suggest remaining questions and opportunities for future research.

Features of Recent Gentrification

The term *gentrification* elicits many definitions. In this article, we refer to gentrification as the process in which neighborhoods with low SES experience increased investment and an influx of new residents of higher SES. Other markers of gentrification include changes in physical, cultural, and demographic characteristics. Improvements in amenities, such as safety or shopping, and increases in housing values and rents also commonly characterize gentrification.

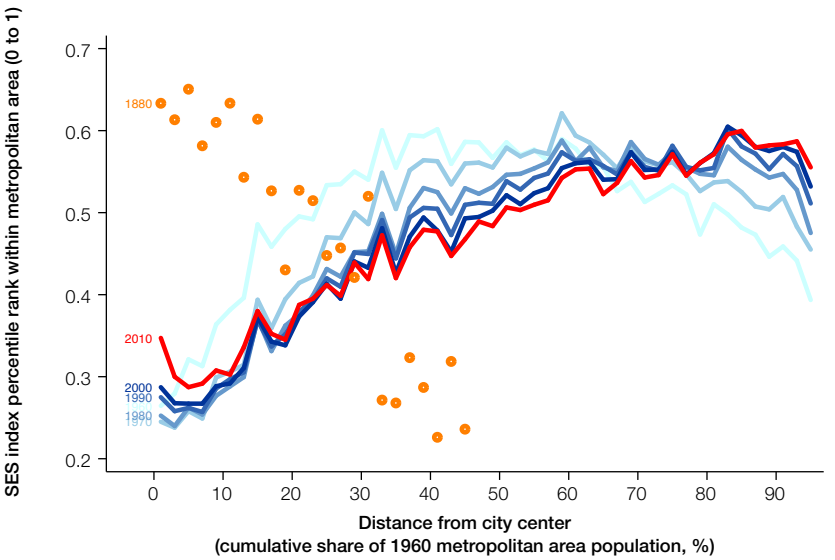
Beginning in the 1970s and 1980s, some isolated cities and neighborhoods in the United States saw reversals in status declines, inspiring an early wave of research on inner-city gentrification.

Gentrification in this period was typically slow, was confined to downtowns in the largest cities, and occurred in historically White or mixed neighborhoods (Freeman, 2009; Smith, 1996). On average, though, U.S. downtowns continued to have low SES. Since 2000, the revival of central-city or downtown neighborhoods has expanded, as noted by many researchers, including Baum-Snow and Hartley (2016); Couture and Handbury (2016); Edlund, Machado, and Sviatschi (2015); and Lee and Lin (2015).

Exhibit 1 summarizes some of these findings by displaying neighborhood SES in 1880 and between 1960 and 2010 within 168 large U.S. cities, using consistent-boundary census tracts, U.S. decennial censuses, and American Community Survey (ACS) data (Lee and Lin, 2015).[1] We

Exhibit 1

U.S. City Structure and Neighborhood Status, 1880 to 2010



SES = socioeconomic status.
Notes: The 168 Core Based Statistical Areas (CBSAs) had a combined population of 203 million in 2010. The reported averages are weighted by each tract's population share within CBSA, so each CBSA is weighted equally. SES index = average of within-CBSA percentile ranks in (1) college-educated share of 25+ population and (2) average household income. In 1880, SES index = within-CBSA percentile rank in occupational income score. Distance from city center = ring containing nearest consistent-boundary tracts to city center comprising (n) percent of the 1960 CBSA population but excluding (n–1) percent of the 1960 CBSA population, where n is an integer between 1 and 100. For example, tracts in the 10-percent ring include the nearest tracts to the city center comprising 10 percent of the 1960 CBSA population but exclude the nearest tracts to the city center comprising 9 percent of the 1960 CBSA population. Tracts in the 10-percent ring are, on average, 3.3 kilometers (km) from the city center (standard deviation = 2.9 km, 10th percentile = 1.5 km, median = 2.6 km, 90th percentile = 5.0 km). City centers are from the 1982 Census of Retail Trade (Fee and Hartley, 2013).
Source: Authors' calculations using 48,068 consistent-boundary census tracts in 168 large U.S. metropolitan areas (CBSAs) in 1960 and 31 CBSAs in 1880 (for more details, see Lee and Lin [2015])

[1] These data draw from Lee and Lin (2015), based on decennial censuses from 1880 to 2010 and 5-year ACS data from 2006 to 2010 (Logan et al., 2011; Logan, Zengwang, and Stults, 2014; Minnesota Population Center, 2011; Ruggles et al., 2010; Tatian, 2003). Lee and Lin (2015) selected these 168 large metropolitan areas based on available census tract data in 1960, and these metropolitan areas contain about two-thirds of the total U.S. population today. Tract data are harmonized to 2010 census boundaries.

compute an SES index for each census tract (or "neighborhood"). This index averages a neighborhood's percentile rank within its metropolitan area's distribution of (1) the share of adults 25 years and older with at least a college degree and (2) average household income.[2] Because each index input is scaled as a neighborhood's percentile rank within a metropolitan area, the SES index ranges between 0 and 1.

To better reflect the structure of the average U.S. metropolitan area, rather than the experience of the average neighborhood, our measure of city center proximity depends flexibly on the historical within-metropolitan area distribution of population. We classified tracts into fixed categories based on the cumulative share of the total metropolitan population nearest to the city center in 1960. For example, tracts in the "10-percent ring" contain the closest 10 percent, but exclude the closest 9 percent, of the metropolitan area population in 1960. (Across cities, the average tract centroid in the 10-percent ring is 3.3 kilometers from the city center and the median distance is 2.6 kilometers.) Although similar patterns can be seen using geographic distance instead (see appendix exhibit A-1), our flexible measure of centrality adjusts for generally larger downtowns in larger metropolitan areas. For example, one would generally find dense urban neighborhoods 8 kilometers from the center of Chicago, Illinois, but, at the same distance from central Green Bay, Wisconsin, one would be more likely to find farmland. The effect of our measure is to compress geographic distances in larger cities so that comparisons across cities at a fixed "distance" are more likely to compare neighborhoods with similar access to jobs and amenities. Further, changes in tract SES are weighted by the tract share of the total population in each ring, reducing the influence of the preponderance of neighborhoods in large cities such as New York, New York, or San Francisco, California.

Since the 1970s, and especially since 2000, downtown gentrification has strengthened and a growing number of neighborhoods have gentrified. As exhibit 1 indicates, the average SES index for downtown neighborhoods has steadily increased since the 1970s, and these increases strengthened after 2000. Panel A of exhibit 2 shows the share of downtown tracts[3] experiencing a 2-quartile increase in the SES index since 1960—for example, from the lowest-SES index neighborhood in a metropolitan area to the median-SES index neighborhood or from the median-SES index neighborhood to the highest-SES index neighborhood. In 1970, only 1.1 percent of downtown tracts in big cities[4] had experienced such large increases in SES since 1960. By 2010, that share had increased to 7.7 percent. A smaller share of downtown tracts in small cities have also seen increases in SES since 1960, and that share has also increased.

Panel B of exhibit 2 also illustrates one reason why public awareness of gentrification has grown: the increasing share of *metropolitan areas* with at least one downtown tract that has experienced a 2-quartile increase in the SES index since 1960. In 1970, only one in four large cities and virtually no small cities had at least one gentrifying downtown neighborhood by this measure. By 2010,

[2] Neighborhood change can be characterized in many ways. The inputs to this index are easily obtained and highly correlated with other measures of SES. Baum-Snow and Hartley (2016) use standardized scores instead of percentile ranks to normalize their SES index inputs to similar effect. They also include percent non-Hispanic White in their index.

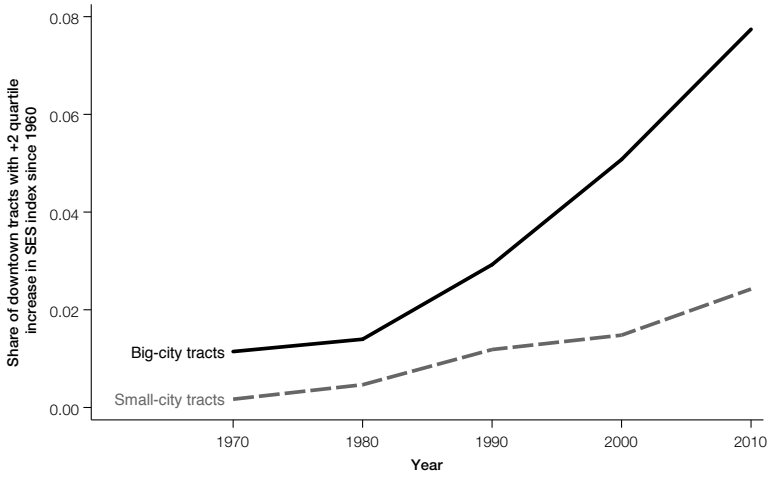
[3] "Downtown tracts" in exhibit 2 are those consistent-boundary tracts closest to the city center comprising 10 percent of the metropolitan area population in 1960.

[4] "Big cities" in exhibit 2 are the 26 metropolitan areas in 1960 that had populations of at least 1 million.

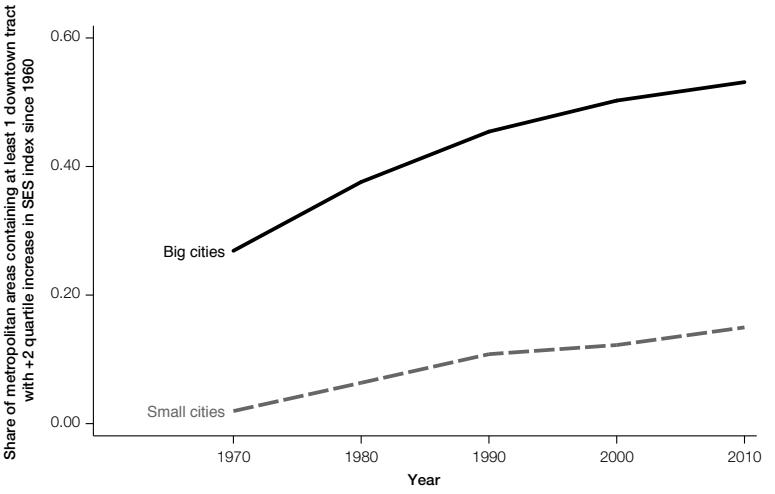
Exhibit 2

Gentrification Has Spread to More Neighborhoods and Metropolitan Areas Since 1960

Panel A. Downtown Tracts



Panel B. Metropolitan Areas



SES = socioeconomic status.
Notes: Downtown tracts are consistent-boundary census tracts closest to the city center comprising 10 percent of the Core Based Statistical Area population in 1960. Big cities (solid lines) are 26 metropolitan areas with populations of at least 1 million in 1960. Panel A shows the share of downtown tracts. Panel B shows the share of metropolitan areas.
Source: Authors' calculations using census data

more than one-half of all large cities and 15 percent of smaller metropolitan areas had seen such changes. Thus, during recent decades, an increase in SES near city centers has occurred along with an expansion of this pattern to more neighborhoods and more cities than before.

Researchers have also noted that recent downtown changes are characterized not by population growth but by large shifts in the composition of households—toward higher-SES residents. Baum-Snow and Hartley (2016), Couture and Handbury (2016), and Kolko (2016), on the basis of census table decompositions by race, age, and education, found that White, prime-age, college-educated households have been more likely to choose downtown neighborhoods since 2000 compared with earlier periods. A complementary finding, consistent with large composition shifts seen in downtown neighborhoods, is that other race, age, and education groups are living in downtown neighborhoods at similar or less frequent rates since 2000 compared with earlier periods.

Another common finding by Baum-Snow and Hartley (2016); Edlund, Machado, and Sviatschi (2015); and others is that, since 2000, the employment of college-educated workers is no longer declining in traditional downtowns (and is even increasing in some cities), while jobs that require less education and lower-skilled jobs continue to decline downtown. Results by Baum-Snow and Hartley (2016) and Couture and Handbury (2016), discussed in more detail later, suggest that high-SES households moving downtown appear to have increased their valuation of downtown amenities since 2000 compared with earlier periods. Many researchers, including Ellen, Horn, and Reed (2016), also have noted the large decline in crime, especially violent crime, in central cities.

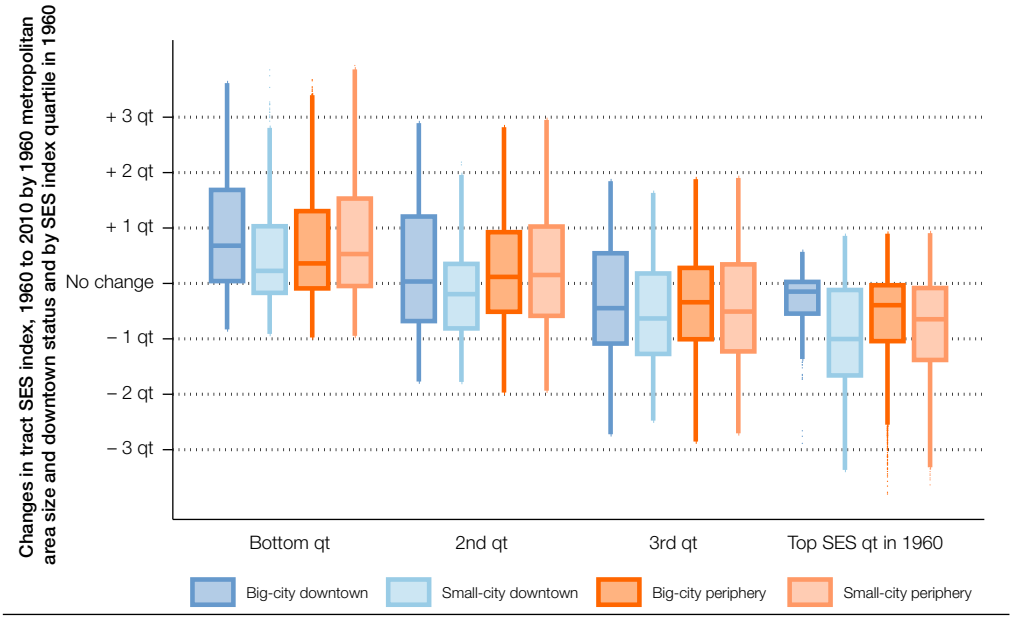
Several features of recent gentrification often are not highlighted in the existing literature. For example, exhibit 1 also shows that more socioeconomically advantaged populations used to live in U.S. downtowns, based on occupational income scores for 31 metropolitan areas in 1880. (Because neighborhood income is not reported in the 1880 census, Lee and Lin [2015] used occupational income scores, which are national averages of income by occupation, weighted by the share of each neighborhood's residents employed in each occupation.) Despite improving fortunes, downtowns as a whole are still less advantaged than metropolitan areas as a whole. Baum-Snow and Hartley (2016) noted that, among the largest 120 metropolitan areas, only 2 had downtowns that had a higher SES compared with that of the average neighborhood in the metropolitan area in 1980. By 2010, that figure had improved to just 11 of 120 metropolitan areas. Further, downtown revival is still limited to a narrow geographic area: on average, neighborhoods beyond 3 kilometers of city centers have a lower SES index in 2010 compared with 1960. A recent study by Guerrieri, Hartley, and Hurst (2013) highlights the fact that recent gentrification is strongly spatially dependent on historical patterns of neighborhood incomes. This spatial dependence points to the importance of localized rather than regional or global factors in recent gentrification.

A final feature of recent gentrification that we highlight is the heterogeneity of changes across neighborhoods and metropolitan areas. Exhibit 3 shows some of this heterogeneity in neighborhood change by metropolitan area size and downtown status.[5] Each box shows the 25th, 50th, and 75th percentiles of changes in the neighborhood SES index from 1960 to 2010 according to the quartiles of tracts' initial SES index value in 1960 and separated by small and big metropolitan areas and downtown and peripheral neighborhoods. (Changes in the neighborhood SES index depend on tracts'

[5] Definitions for "downtown tracts" and for "big" and "small" cities are the same as in exhibit 2.

Exhibit 3

Heterogeneity in Neighborhood Change, 1960 to 2010



qt = quartile. SES = socioeconomic status.
Notes: Boxes show 25th, 50th, and 75th percentile of changes in tract SES index, 1960 to 2010. Dots outside whiskers exceed 1.5 times interquartile range.
Source: Authors' calculations using census data

initial SES index value in 1960. For example, tracts in the bottom quartile in 1960 cannot experience declines in their SES index by more than one quartile, or 25 percentile points. Tracts in the top quartile in 1960 similarly cannot experience increases in their SES index by more than one quartile.)

Starting with the bottom quartile of neighborhoods by the SES index in 1960 on the left, the exhibit shows that the median big-city downtown neighborhoods experienced greater increases in the SES index compared with outlying big-city neighborhoods and all small-city neighborhoods. About one-fourth of these tracts, however, saw no increase or they declined. Further, many bottom-ranked small-city and peripheral neighborhoods saw increases of more than three quartiles in the SES index. This finding is consistent with some recent work finding gentrification outside of downtowns (Hackworth and Smith, 2001) and a broadening trend of gentrification in historically Black neighborhoods (Freeman and Cai, 2015; Hyra, 2008; Owens, 2012). Last, the divergence between big- and small-city downtown neighborhoods indicates that gentrification, in general, is more prevalent in larger cities than in smaller cities.

Turning to the middle (2nd and 3rd) quartiles of neighborhoods by the SES index in 1960, the exhibit shows that downtown neighborhoods experienced similar changes in the SES index compared with other neighborhoods. One potential implication of this pattern is that factors driving the gentrification of low-SES downtown neighborhoods are absent or less prevalent in middle-SES downtown neighborhoods.

Finally, the top quartile of neighborhoods by the SES index in 1960 reveals a sharp distinction between big-city downtown neighborhoods and other neighborhoods. By contrast with the 25 to 50 percent of small-city downtown or peripheral neighborhoods that have seen declines in the SES index between 1960 and 2010, only a handful of such neighborhoods in big-city downtowns have seen declines.

In sum, since 2000, U.S. cities have seen greater increases in the SES index and other measures in downtown neighborhoods and an expansion of SES index increases to more cities and neighborhoods. Compositional shifts toward White, prime-age, and college-educated households—not population growth—are more characteristic of recent changes. Although lower-skilled or lower-education jobs continue to suburbanize, jobs employing college-educated workers have stopped declining or have even increased in traditional downtowns. Downtown safety and amenity values appear to have increased. A sizable number of downtown neighborhoods in big cities, however, have not seen increases in our SES index at all, and a number of peripheral neighborhoods in smaller metropolitan areas have seen dramatic changes. Despite improving fortunes, the average downtown neighborhood is of lower status compared with its metropolitan area as a whole. Moreover, gentrifying neighborhoods exhibit a strong spatial dependence on historical patterns of income, and, on average, downtown revival has still improved the SES of only those neighborhoods within relatively short distances of U.S. city centers (but more so in big cities). Finally, changes in neighborhoods with middle-SES indexes are similar in big-city downtowns compared with small cities or peripheral areas, but neighborhoods with high-SES indexes in big cities have shown remarkable persistence since 1960.

Interpreting Recent Evidence

In theory, many factors may cause these neighborhood changes. Households might be more attracted to a particular neighborhood because of (1) increases in access value, (2) increases in amenity value, or (3) declines in the prices of houses relative to other neighborhoods. Changes or investments in neighborhood factors (such as new highways or improved safety), changing tastes for those neighborhood factors, or demographic shifts toward households that value those factors may cause increases in access or amenity value. Relaxed credit constraints might decrease the cost of housing in certain neighborhoods. Disinvestment and the deterioration of houses also might ease redevelopment. Relative prices may also decline with increasing demand for nearby areas with inelastic housing supply. In this section, we review and interpret findings of the recent literature, which has focused on changes in job access, changes in amenities, and changes in the valuation of those amenities.

Jobs

Recent studies suggest that changes in job access have affected recent gentrification. For example, Edlund, Machado, and Sviatschi (2015) emphasize increases in the opportunity cost of commuting among college-educated workers, and Baum-Snow and Hartley (2016) cite high-skilled jobs shifting toward central cities. Of course, high-skilled jobs and employers requiring college degrees may simply follow household movements. If that is the case, then changes in the geography of jobs are a symptom, rather than a cause, of recent downtown gentrification.

A common strategy to deal with the potential endogeneity of this relationship is to use Bartik (1991) or shift-share indexes to identify possibly exogenous changes in job growth for different locations. These indexes use historical job locations and national, industry-specific employment growth to predict local job growth, thus (hopefully) obtaining measures of job location that are not affected by changes in household location decisions. Using regressions of housing-price changes from 1980 to 2010 for 27 large U.S. cities, Edlund, Machado, and Sviatschi (2015) found that housing in census tracts closest to city centers of metropolitan areas experiencing increases in demand for college-educated workers (instrumented with a Bartik index) tended to increase in price. Baum-Snow and Hartley (2016) regress changes in an SES index against changes in demand for workers at both the metropolitan area level and the central business district level, instrumented with a metropolitan-level Bartik index and a downtown-specific Bartik index. Overall, they found that metropolitan-level labor demand shocks are not likely to be causing central neighborhood gentrification and that downtown-oriented labor demand shocks only partially explain recent changes.

Despite controls for observable characteristics, such as natural amenities and historical factors, a standard concern about the use of these instruments is the presence of omitted factors correlated with both initial job locations and changes in the geography of workers. Although the use of these instruments is standard among labor and urban economists studying the employment and wage effects of local labor demand shifts, it is worth thinking about whether the identification assumptions hold in this context. One specific concern is the secular increase in household expenditures on education and health services. Employment at hospitals and universities, many located in and near traditional downtowns, has benefited as a result. These long-lasting institutions, however, may also have increasingly produced significant amenities (public safety, retail serving employees and students, cultural events, and so on) that have also attracted high-income workers (Diamond, 2016).

Of course, job access is not the only kind of access that might matter for attracting individuals with higher SES to central cities. For example, the scarcer leisure time among high-income households that Edlund, Machado, and Sviatschi (2015) highlight may increase the value of proximity to both work and consumption opportunities available downtown. As more high-income households have been attracted to denser, more urban neighborhoods, economies of density may have further lowered the cost or increased the variety and availability of outsourced home production services (dry cleaners, restaurant meals, and so on). New trends in urban design that enhance walking or biking may also complement economies of density, and new technologies, such as Yelp, complement urban amenity consumption.

In a detailed analysis of census commuting tables, holding job location fixed, Couture and Handbury (2016) found increased flows of high-income workers from downtown to the suburbs from 2000 to 2011. In other words, many high-income workers with jobs in the suburbs chose longer commutes in 2011 compared with 2000, a pattern that was even stronger in the 10 largest metropolitan areas. At least for those workers, better job access appears subordinate to increasing demand for downtown amenities.

Amenities

In contrast to mixed evidence on the role of job access, there appear to be more robust changes in amenity values in the neighborhoods chosen by particular households, including (but not limited to) White, prime-age, and college-educated workers. Baum-Snow and Hartley (2016) leave open

whether these shifts are due to diverging amenities or diverging tastes for amenities that tend to be located downtown. By contrast, Couture and Handbury (2016) attempt to directly estimate the effect on neighborhood change by neighborhood-specific consumption amenity indexes composed of 11 types of retail and cultural establishments, including theaters, museums, restaurants, grocery stores, and personal service establishments. Again, these consumption amenities may be responding to household movements and may be a symptom, rather than a cause, of recent gentrification. Couture and Handbury (2016) constructed a neighborhood shift-share index using initial establishment locations in 2000 combined with national industry- or chain-specific entry and exit patterns since 2000. Again, an identifying assumption is that no omitted factors are correlated with initial establishment locations or national changes in entry and exit patterns and changes in consumer locations.

Using these instruments, Couture and Handbury (2016) found that many measured consumption amenities in 2000 levels explain the neighborhood entry of young, college-educated workers, but changes in consumption amenities from 2000 to 2011 generally do not. Couture and Handbury's (2016) preferred interpretation is that diverging preferences (rather than diverging amenities) for retail, entertainment, and service establishments explain the diverging location decisions of the young and college-educated. Their model, however, is less able to explain why gentrification has been stronger in big-city downtowns compared with smaller cities.

Crime has also fallen significantly in central cities. Kneebone and Garr (2010) found that violent crime fell faster in central cities compared with their suburbs in 90 of the 100 largest metropolitan areas between 1990 and 2008. Ellen, Horn, and Reed (2016) found that high-income and college-educated households were more likely to choose central-city neighborhoods with faster declines in violent crime between 1990 and 2010, and these choices were more sensitive to crime declines compared with lower-income or less-educated households. Couture and Handbury (2016) similarly noted a strong correlation between downtown neighborhood increases in SES and declines in the central city-suburb crime gap.

These associations suggest that declines in crime increased the attractiveness of downtown neighborhoods, especially to high-SES households, but these associations may also be consistent with gentrification causing declines in crime (Kirk and Laub, 2010). Couture and Handbury (2016) noted that 80 percent of the two-decade decline in crime occurred in the 1990s, but central-city gentrification was more intense in the 2000s. Thus, timing suggests that reverse causation may not be a significant factor. Further, households may be slow to update their beliefs about neighborhood safety. Ellen, Horn, and Reed (2016) found that intrametropolitan movers are much less sensitive to drops in central-city crime. By contrast, movers from different metropolitan areas, who may have weaker preexisting beliefs or have updated their beliefs more recently, are much more likely to choose central-city neighborhoods in response to declines in crime.

Although these studies all agree that changes in the amenity value of downtowns are important for understanding recent gentrification, other studies suggest that changes in the geography of amenities might correlate with omitted factors. Some of the trends highlighted earlier suggest important features and roles of other factors in explaining recent gentrification. The historical affluence of downtown neighborhoods seen in exhibit 1 and the persistence of high-SES downtown neighborhoods since 1960 seen in exhibit 3 suggest very durable or historical fixed factors in central cities.

Some of these factors include natural amenities (Lee and Lin, 2015); transportation infrastructure and networks (LeRoy and Sonstelie, 1983; Lin, 2002); or civic, educational, or cultural institutions (Taub, Taylor, and Dunham, 1984). Further, the strong spatial dependence of recent gentrification on historical patterns of housing prices (Guerrieri, Hartley, and Hurst, 2013) and the still-limited spatial extent of downtown revival suggest extremely local, perhaps building- or block-level, factors. One important implication may be that only *slight* shifts in preferences, such as those highlighted by Couture and Handbury (2016), may be necessary to explain the rapid gentrification of downtown neighborhoods endowed with persistent, localized factors.

Expanding the Scope of Causal Factors

Although establishing causation of a particular factor is a worthy goal, as many of the studies reviewed so far set out to do, a full account of a broad range of factors is still elusive. Further, the wide dispersion in socioeconomic changes across neighborhoods suggests that many factors are at work in gentrifying neighborhoods. In the remaining two sections of this article, we discuss an expanded scope of causal factors, potential next steps, and opportunities for future research.

Public Policy

Many scholars have noted an increased role of state actors and public policy in facilitating gentrification in recent decades—a characteristic that they note is markedly different from the gentrification of the past (Hackworth and Smith, 2001). Hackworth (2007) argues that, in recent decades, city leaders' policymaking shifted from a welfare state based on direct public intervention to a reliance on free market solutions, promoting business friendly and public-private partnerships in arenas that previously had relied solely on public funding, such as housing for low-income households. Such policies, he argues, facilitate the gentrification of central cities. Wyly and Hammel (1999) and Goetz (2011) link the demolition of public housing projects and redevelopment efforts through the U.S. Department of Housing and Urban Development's HOPE VI Program to gentrification. They argue that such efforts target areas that are more likely to have greater returns on market-rate housing and generally promoted gentrification in or near minority neighborhoods that middle-class residents once avoided.

Others have argued that programs like historical preservation, business improvement districts, zoning and land use changes, tax-increment financing practices, ordinances imposed on public space (for example, homelessness removal), and the beautification of public spaces all contribute to efforts that can shift the amenity value of neighborhoods (Mitchell, 2003; Ward, 2007; Weber, 2002; Wilson, 2004; Zukin et al., 2009). An additional policy arena that may influence gentrification is education. Although the empirical evidence on the relationship between gentrification and school reform is weak, the growth of charter schools and school choice options may encourage more households with higher SES to move to or stay in central cities (Jordan and Gallagher, 2015).

New Technologies

New technologies and business models reduce access disadvantages previously associated with downtown locations. Access to suburban big-box retailers may be less important with the advent of

mass same-day delivery services for groceries, apparel, general merchandise, and more. Increasing traffic congestion in suburban neighborhoods and new technologies such as ride-sharing apps improve the relative accessibility of city centers. Further, new flexible work scheduling and telecommuting may decrease the importance of job access for some workers. These changes may have ameliorated some of the past inconveniences of dense urban living.

Race, Ethnicity, and "Diversity"

Changes in the racial and ethnic compositions of urban neighborhoods may also have attracted gentrification. During the past few decades, U.S. cities have seen declines in racial segregation and an increasing prevalence of multiethnic neighborhoods (Logan and Zhang, 2010). Further, surveys indicate improving racial attitudes over time across the general population (Bobo and Charles, 2009). Changing racial attitudes coupled with the growth of multiethnic neighborhoods may reduce the disamenity of living near other groups for high-SES households. Powerful actors, however, can also manipulate these tastes. For example, ethnographic studies demonstrate how developers market neighborhoods in certain ways to attract gentrifiers, such as repackaging ethnic histories of neighborhoods and marketing the neighborhood's "diversity" or creating areas that seem "culturally authentic" (Anderson and Sternberg, 2013; Mele, 2000; Zukin, 2011). These actors can also play important roles in altering how people perceive neighborhoods, thereby changing the amenity value of neighborhoods without causing shifts in measured neighborhood characteristics. For example, Hwang and Sampson (2014) found that neighborhood perceptions of disorder have an independent effect on the pace of gentrification in Chicago neighborhoods.

Family Structure and Demography

Changes in household formation and demographic structure may also explain the growth in downtown living. The millennial generation, whose earliest cohorts entered their 20s beginning in 2000, exceeds the size of the baby boomer generation and is highly educated relative to past generations (Myers, 2016). This generation has also exhibited patterns of delayed household formation and homeownership. Studies document the increases in nonfamily households (for example, roommates), childless families, and young adults in gentrifying neighborhoods (Furman Center for Real Estate and Urban Policy, 2016). Although some scholars argue that millennials have distinct preferences for urban living or other neighborhood features relative to past generations, Myers (2016) argues that these patterns are a feature of the timing of their workforce entry and the Great Recession. Thus, these demographic shifts may have contributed to the gentrification of downtowns in recent decades.

Housing Finance

The structure of housing finance also shifted in recent decades in a way that may have promoted gentrification. Hyra (2012) argues that the increased availability of capital and credit due to shifts in the banking industry, such as the loosening of mortgage markets and securitization, facilitated gentrification in many areas, particularly in minority neighborhoods that had previously faced discrimination in mortgage financing practices. Further, Wyly and Hammel (1999) demonstrate that discriminatory mortgage investment is more likely to occur in gentrifying neighborhoods, suggesting that these lending practices contributed to the increased share of White households into gentrifying areas.

Housing Supply

The similar fortunes of neighborhoods in the middle range of the SES index both downtown and elsewhere from 1960 to 2010 suggest that recent downtown gentrification depends on factors specific to low-SES-index downtown neighborhoods compared with middle-SES-index downtown neighborhoods. Given their spatial proximity, one possible distinction is the role of developers, builders, policymakers, and deterministic depreciation in reducing the value of houses, roads, and infrastructure. This depreciation eventually makes neighborhood redevelopment profitable, as emphasized by Smith (1979), Brueckner and Rosenthal (2009), and others. Many of these declining neighborhoods also experienced dramatic declines in population and high rates of vacancies, providing accessible points of entry and opportunity for development.

High-SES households have increasingly sorted into "superstar cities," or high-amenity, low-housing construction metropolitan areas (Gyourko, Mayer, and Sinai, 2013; Diamond, 2016). Broader pressures for urban living in these metropolitan areas where overall demand exceeds housing supply may also cause gentrification in neighborhoods that would not have gentrified otherwise. These factors may help explain the divergence between big-city and small-city downtowns noted earlier.

Next Steps and Future Research

Recent studies suggest that changes in the geography of jobs and changes in the amenity value of neighborhoods have caused recent gentrification in the United States, especially in downtown neighborhoods. The literature, however, still lacks an account of the relative contribution of a broad range of factors; thus, the causal mechanisms are still unclear. Counterfactual exercises, similar to one performed by Couture and Handbury (2016), might help in understanding the extent and scope of gentrification absent exogenous changes in particular factors. An expansion in the scope of factors considered would strengthen the credibility of such exercises and might better account for the heterogeneity in observed neighborhood change, both across metropolitan areas and even among a relatively narrow group of primarily downtown neighborhoods. Finally, additional creative identification strategies, perhaps using natural experiments or matching estimators, would complement the existing evidence that relies mostly on Bartik-style instrumental variables identification (Bartik, 1991). Nonetheless, such identification exercises may still face challenges, given the complex range of factors that we described previously. Research designs that can support causal inference, such as strategic case selection in qualitative research, and the increasing scope of available data can enhance this effort.

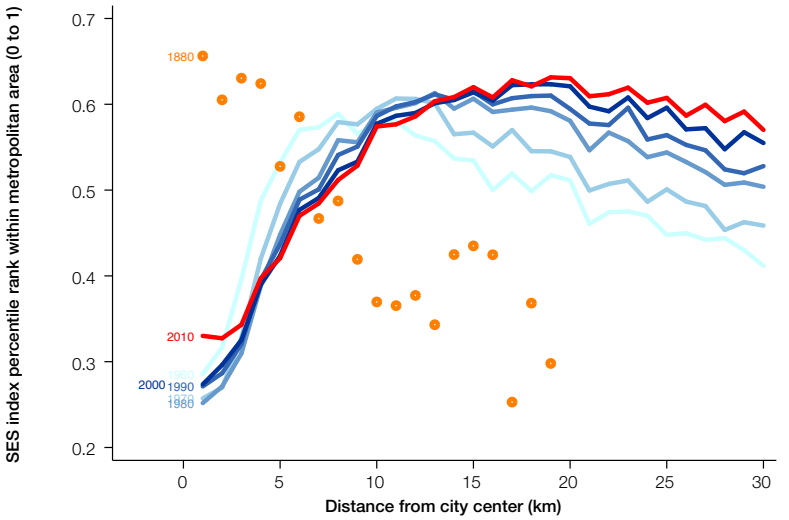
Based on the evidence reviewed here, we have partial answers to some of the motivating questions mentioned in the introduction. Demand for certain neighborhoods, especially in central cities, has increased since 2000. Although we have some evidence that the presence of jobs and amenities is spurring gentrification in some neighborhoods, we have less understanding of the causal role of redevelopment decisions, supply constraints, or shifting preferences. Both jobs and amenities seem to have reinforced an inversion in the once dominant pattern of rich suburbs and poor central cities—high-skilled jobs and high-skilled workers are centralizing, but low-skilled jobs and low-skilled workers continue to suburbanize. What is less clear is the durability of recent changes. A perhaps unsatisfying side effect of explaining recent gentrification with changes in tastes

is that doing so may not be a useful guide for forecasting future changes. Will subsequent cohorts of college-educated workers continue to choose downtowns? Or will their locational choices tilt back toward the suburbs? The historical affluence and remarkable persistence of the handful of high-SES downtown neighborhoods suggest fundamental, long-lived advantages. The century-long decline of U.S. downtowns suggests, however, that these fundamental advantages do not uniquely determine neighborhood outcomes. Are responses to endogenous policies and amenities so strong that recent gentrification is self-sustaining? Or does recent gentrification revert if subsequent cohorts no longer value urban amenities as much as today's gentrifiers? In sum, research devoted to understanding the causes of gentrification that considers a broader range of factors and creative research strategies is necessary to help us come closer to answering such questions.

Appendix A

Exhibit A-1

U.S. City Structure and Neighborhood Status, 1880 to 2010



km = kilometer. SES = socioeconomic status.

Notes: The 168 Core Based Statistical Areas (CBSAs) had a combined population of 203 million in 2010. The reported averages are weighted by each tract's population share within CBSA, so each CBSA is weighted equally. SES index = average of within-CBSA percentile ranks in (1) college-educated share of 25+ population and (2) average household income. In 1880, SES index = within-CBSA percentile rank in occupational income score. Distance from city center = ring containing nearest consistent-boundary tracts to city center comprising (n) percent of the 1960 CBSA population but excluding (n–1) percent of the 1960 CBSA population, where n is an integer between 1 and 100. For example, tracts in the 10-percent ring include the nearest tracts to the city center comprising 10 percent of the 1960 CBSA population but exclude the nearest tracts to the city center comprising 9 percent of the 1960 CBSA population. Tracts in the 10-percent ring are, on average, 3.3 km from the city center (standard deviation = 2.9 km, 10th percentile = 1.5 km, median = 2.6 km, 90th percentile = 5.0 km). City centers are from the 1982 Census of Retail Trade (Fee and Hartley, 2013).

Source: Authors' calculations using 48,068 consistent-boundary census tracts in 168 large U.S. metropolitan areas (CBSAs) in 1960 and 31 CBSAs in 1880 (for more details, see Lee and Lin [2015])

Acknowledgments

This article was prepared as a paper for the 2016 Research Symposium on Gentrification and Neighborhood Change at the Federal Reserve Bank of Philadelphia. The authors thank Ingrid Gould Ellen and two anonymous referees for helpful comments.

Authors

Jackelyn Hwang is a postdoctoral research fellow in the Office of Population Research at Princeton University and will be an assistant professor of sociology at Stanford University beginning in 2017.

Jeffrey Lin is an economic advisor and economist in the Research Department at the Federal Reserve Bank of Philadelphia.

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