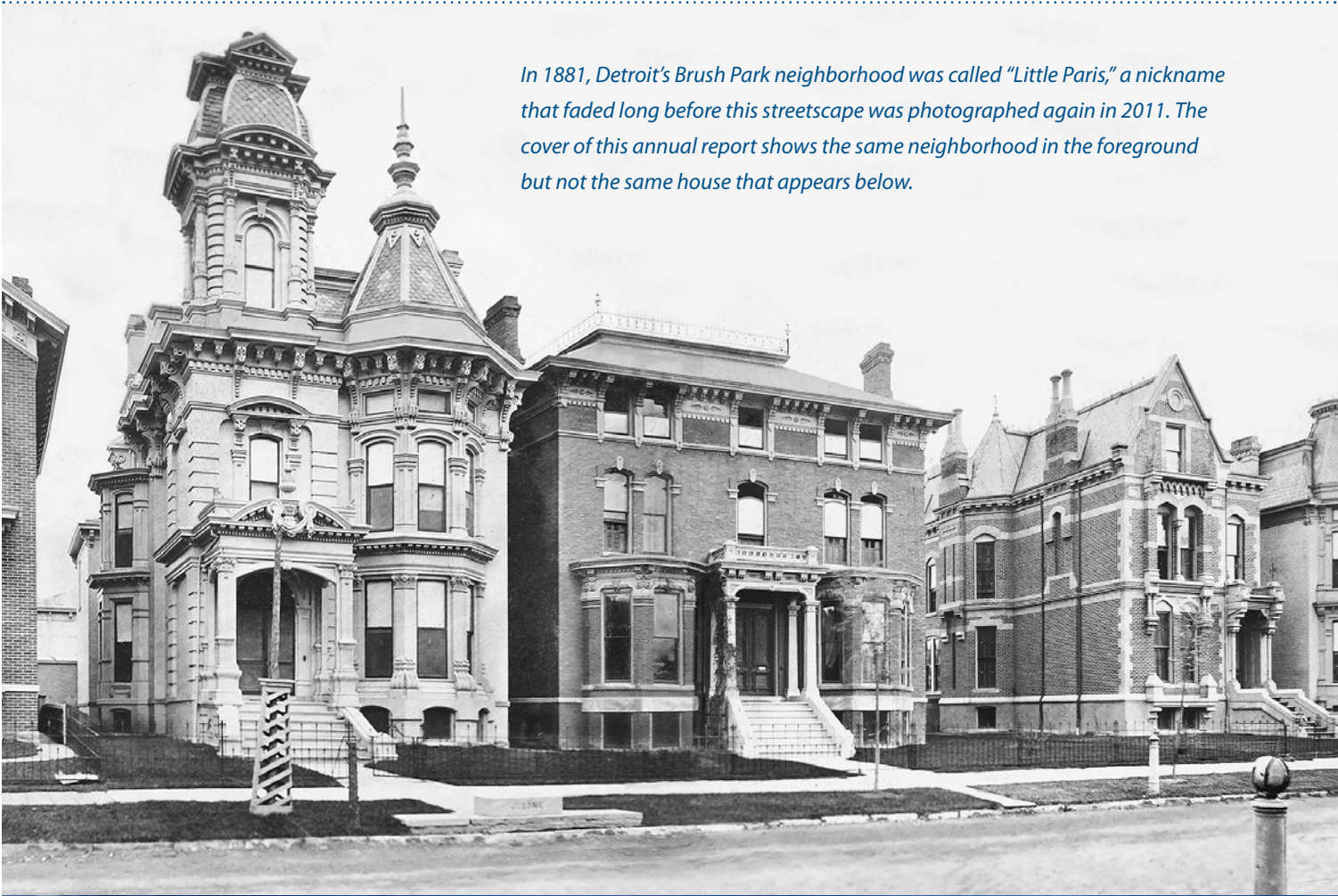


In 1881, Detroit's Brush Park neighborhood was called "Little Paris," a nickname that faded long before this streetscape was photographed again in 2011. The cover of this annual report shows the same neighborhood in the foreground but not the same house that appears below.



Photos: top ©Burton Historical Collection, Detroit Public Library; bottom ©Michael G. Smith

Understanding Urban Decline

By Santiago Pinto and Tim Sablik

Over the past two centuries, the population of the United States has become increasingly concentrated in cities. In the 1800s, only 6 percent of people lived in urban areas. Today, nearly two-thirds of Americans live in cities, and these cities account for only 3.5 percent of available land in the country.¹ Urbanization also is taking place around the globe. More than half of the world's population lives in cities today, and the World Bank estimates that cities collectively will add another two billion people by 2045.

Not only is population in the United States concentrated in cities, the nation's economic activity is as well. Large cities accounted for roughly 85 percent of the country's gross domestic product (GDP) in 2010.² Concentrating economic activity in this way produces a number of benefits. Places with higher population density exhibit faster growth in productivity and per-capita GDP. Cities are also wellsprings of innovation, accounting for a disproportionate share of new patents.³ Clearly, cities matter.

These benefits make it all the more puzzling that a number of prominent U.S. cities have experienced large population declines in recent decades. St. Louis, Detroit, Cleveland, and Pittsburgh, for example, each lost half or more of their populations between 1950 and 2010. Others, such as Baltimore, Chicago, and Minneapolis suffered smaller, though still substantial, population losses during the same period.

If these changes merely reflected shifts in population from one city to another more desirable or more productive city, there wouldn't necessarily be any cause for concern. However, evidence suggests that urban population outflows have hurt some lower-income people who have been left behind. Declining city centers frequently exhibit high and persistent poverty rates. For instance, in Detroit and Cleveland, 40.3 percent and 36.2 percent of the population, respectively, were below the poverty line in 2015. Meanwhile, the average income of the surrounding suburbs has risen.⁴ In fact, the metropolitan statistical areas (MSAs) surrounding many declining cities have grown in population since 1950. For example, the Detroit and Baltimore MSAs each added more than one million people between 1950 and 2010.⁵ As city centers decline, those people and firms who can leave do, and those who cannot (frequently low-income, low-skilled households) are stuck with dimming economic prospects.

Urban policymakers in declining cities justifiably want to revitalize their cities and help the people who live there. To do so effectively, it is important to first understand what factors determine where people and firms locate, both within and across cities, and what might cause them to move. Second, it is important to understand what policies will be effective at reversing urban decline. The economic benefits that arise from people and firms living



Chicago generally is an exception to the rule that wealthier residents prefer to live outside city centers.

and working together in a city (referred to by economists as agglomeration economies) suggest that even small-scale policy interventions could have outsized effects and potentially improve the welfare of many individuals living in a city, not just the original target group. But as this essay will show, policymakers must carefully consider which interventions will best assist the households they wish to help. The mixed record of any one type of urban revitalization policy suggests that a combination of “place-based” policies (which direct resources to help certain low-income areas) and “people-based” policies (which provide assistance to people regardless of where they live) may be more successful. This essay reviews evidence of the effectiveness of each approach.

Why Do Cities Exist?

In order to examine the effects of different urban policies, it is useful to first understand the benefits that cities provide. Cities arise because there are advantages to concentrating economic activity in one place, known as agglomeration economies. When businesses in the same industry cluster together, they can share inputs, such as tires for cars. The more carmakers that cluster in a region, the more demand they’ll generate for tires in that region, making it more attractive for tire makers to locate in the city as well. That agglomeration reduces costs for all the carmakers. Clustered firms in the same industry also can share a common pool of skilled labor. For example, the high concentration of tech companies in Silicon Valley attracts a lot of software engineers. This is particularly advantageous in the case of industries where any individual firm may experience sudden changes in demand. Workers can transition from shrinking firms to growing ones as demand fluctuates. Finally, firms may benefit from knowledge spillovers. Discovery of new ideas is facilitated by more people living and working in close proximity, and new ideas spread from firms through shared labor pools and supply chains.⁶

At the most basic level, households face a trade-off between land and transportation costs.

The preceding examples describe localization economies—benefits that accrue from clusters of firms in the same industry. But agglomeration benefits also arise from concentrations of different industries. A variety of firms can take advantage of general inputs such as transportation networks or banking and legal services. Many firms employ workers with similar skills, even if they are not in the same industry, and cities provide access to a larger pool of skilled labor. Firms also enjoy knowledge spillovers from businesses in different fields or from other institutions such as universities. These benefits that arise as a result of a diverse city are known as urbanization economies.

Cities also provide a variety of production and consumption benefits to individuals who live there. One striking observation is that all else being equal, it appears that worker productivity and average wages are higher in more densely populated areas.⁷ Economists think these gains come from the fact that the larger the city, the more opportunities workers have to interact with other skilled workers and gain valuable experience that they carry with them throughout their careers.⁸ Concentrations of people also make a variety of amenities, such as restaurants or theaters, commercially viable.

Of course, there are limits and costs to urbanization. Higher population densities come with higher cost of land (rents) as well as more congestion and crime. At some point, these costs will discourage further development.

What Do Cities Look Like?

Agglomeration economies also affect where firms and households locate within a city. When there are benefits from locating close to each other, a variety of different spatial configurations can arise. In other words, agglomeration economies can lead to “multiple equilibria.” This provides insight into why we observe the variety of outcomes across cities that we do. For instance, suppose that firms must decide where to set up their facilities in a context in which they benefit from interacting with each other. These benefits, however, decline with distance. This leads to a city with a central business district (CBD) surrounded by a residential area. Simultaneously, some workers may either decide to live close to work, making the CBD a mixed-use commercial/residential area, or live in the suburbs in an entirely residential area.

At the most basic level, households face a trade-off between land and transportation costs. Living and working in the CBD lowers commuting costs, but at the same time, housing will be more expensive if many people want to live there. Some households might choose to reside in locations that are more distant from the CBD if they are compensated by lower housing prices. In addition to the value of land, housing prices also reflect factors such as the quality of schools, access to parks, crime rates, and levels of environmental quality that make some locations within the city more or less attractive than others. For example, studies show that people are willing to pay more to live in neighborhoods with good schools. Housing prices rise approximately 1 percent to 2 percent when test scores, used to measure school quality, increase by 5 percent. In dollar terms, this amounts to an increase of roughly \$4,000 on average.⁹

In most U.S. cities, wealthier households tend to live farther away from the city center, though there are a few notable exceptions (such as Chicago, Philadelphia, and Washington, D.C.).¹⁰ One explanation for this is that wealthier households prefer to occupy more land and

The main underlying assumption in these models is that residents can move freely within cities, but they balance the various trade-offs in such a way that leaves residents indifferent to moving.

therefore are willing to live in the suburbs despite higher commuting costs because the price of housing per square foot is lower. On the other hand, when a household's income becomes sufficiently large, it may choose to move back to the city center to reduce time spent commuting. This type of trade-off could explain, for instance, why both very poor and very wealthy households are found living in some downtowns. Cities such as Boston, New Orleans, Atlanta, and Philadelphia are examples of this type of spatial pattern. Additionally, public transportation can help explain why poorer households live in the city center. Although the cost of housing per unit of land is higher in the city, public transportation allows poor households that don't have access to cars to economize on transportation costs.¹¹

Transportation may further explain the trend of households moving from city centers to the suburbs, often called suburbanization. Several studies suggest that the development of the highway system contributes to "urban sprawl."¹² One study estimated that just one highway passing through a central city reduces its population by 18 percent.¹³ Cities that experience such a decline in commuting costs do still tend to attract population, but that inflow typically causes the city to expand geographically more than it increases the number of people living in the city center.

Certain amenities, such as schools, also may explain neighborhood sorting by income or race. For instance, as wealthier households move to the suburbs, the quality of schools and other public services provided there will tend to rise. As this process unfolds, lower-income households are left behind in the city center with limited access to high-quality local public services. This has been observed in the suburbanization that has taken place in many large U.S. cities starting around the mid-twentieth century. A prominent recent study, for example, relies on the school desegregation experience to examine how a change in the public school system affected the school choice and localization decisions of residents. The study finds that school desegregation led to a decline in white enrollment in central city public schools in the South, and this decline was linked to white suburban migration. In non-Southern districts, the response was an increase in white private school enrollment.¹⁴ These kinds of forces tend to exacerbate the initial income stratification across locations and help explain why neighborhood differences tend to persist.

To study these various trade-offs, economists rely on models (known in the field as spatial equilibrium models) to examine the economic implications of how households (and/or firms) choose and move to their preferred locations. The main underlying assumption in these models is that residents can move freely within cities, but they balance the various trade-offs in such a way that leaves residents indifferent to moving. (See sidebar on page 9 and appendix on page 17.) Moving to a new neighborhood, for example, might provide the benefits of certain amenities at the cost of more expensive housing or longer commutes. Across cities, different characteristics will be reflected in local wages as well as housing costs. For example, evidence suggests that households would not only be willing to pay higher housing prices to live in more attractive cities, they also would accept lower wages.¹⁵

The basic spatial equilibrium model has implications for how cities might look in a setting where the underlying forces of technology and macroeconomic features are not changing over time. Cities are subject to all manner of dynamic forces, however, that can lead to shifts in urban populations and, in turn, city size and composition.



Modeling Land Use

This diagram shows the land-price gradients for firms, households, and agriculture. The land-price gradients, also referred to as bid-rent functions, represent the maximum price economic agents are willing to pay at each location. Land prices, as indicated by the functions, are highest in the central business district (CBD), which, in this case, is the only employment center, and they decline as people and firms move farther away from the CBD. The negative slopes of the commercial/manufacturing and residential land-price gradients are a consequence of the trade-offs between transportation and land costs when people and firms are deciding where to locate their homes or production facilities. The shape of the residential land-price gradient can be explained as follows. Households commute to work in the CBD and decide where to reside. At a locational equilibrium, households should not have incentives to move. This means that households should obtain the same utility at all locations. Note, however, that residing at more distant locations entails higher commuting costs. For households to be willing to reside farther from the CBD, they will need to be compensated through lower land prices. Firms face similar trade-offs, so the same type of reasoning explains the downward slope of the firms' land-price gradient. A more detailed explanation can be found in the appendix.

The relative slopes of the land-price gradients determine where households and firms locate and how land is used at different locations. We can think about how land is allocated across different uses through a mechanism that works as follows. Suppose that (absentee) landlords own the land, and they rent it, at each location, to whoever offers the highest price through a bidding process. The diagram shows a case in which the firms' land-price gradient is steeper than the residential-price gradient. As a result, firms outbid households at locations closer to the CBD, so land is allocated to commercial or manufacturing uses at those locations, and households outbid firms in the suburbs. The size of the city is determined in this case by the intersection of the residential land-price gradient and the horizontal line indicating agricultural land rent. An urban area arises when land rents for nonagricultural uses at locations closer to the CBD are higher than the agricultural rent. At the urban fringe, rents for nonagricultural and agricultural uses should be equalized. The observed market land rent is determined by the party with the highest willingness to pay at any location. Near the CBD this will be the commercial bid-rent curve until it intersects with the residential bid-rent curve. The residential curve will then determine the price of land until it intersects with the agricultural line.



Sturdy row houses like these in Baltimore often become hotbeds of urban revitalization.

The Lifecycle of Cities

Cities undergo long cycles of development and decay. When a city is new, buildings near the CBD are the most desirable and tend to be occupied by a mix of firms and wealthier households. But as those buildings age and deteriorate, those households may move to newer developments surrounding the city, leaving behind lower-income households. This process can repeat multiple times, pushing the city border outward as higher-income households retreat to the newest ring of development. Eventually, deteriorated buildings in the city center are redeveloped, once again attracting higher-income households back to the city and starting the cycle anew. This has taken place, for instance, in cities such as Chicago and Philadelphia.¹⁶ This process, however, has raised some controversies since transforming a neighborhood from low- to high-income may displace the low-income households who live there, a process called gentrification.

In addition to the natural aging cycle, there may be other forces that contribute to gentrification as well. One view suggests that gentrification is more likely to be observed at locations that border richer neighborhoods.¹⁷ Richer neighborhoods attract more high-income households and expand into adjacent areas that are relatively poor. Another related view states that high-income neighborhoods are characterized by low crime rates that eventually attract additional richer households.¹⁸ Lower-income households are displaced by this sorting.

Because buildings are durable goods, it can take a long time for a city to move through its lifecycle. When a city's population is growing, it is profitable to construct new housing because demand and prices for housing are rising, and the city expands rapidly. But when the population declines, existing housing stock doesn't simply disappear. It can take decades before it is profitable to refurbish or replace a building. The surplus of housing depresses house prices below the cost of construction, and the city stops growing.¹⁹ Moreover, falling rents may draw lower-skilled and lower-income households into the city, intensifying urban sorting by income.

The powerful reinforcing effects of agglomeration economies mean that even small policy changes can trigger large transformations in a city over time.

Cities also experience shocks that alter their composition of firms or people. Cities such as San Francisco, Washington, D.C., New York, and Cleveland, for example, appear to have experienced fairly rapid changes in firm composition without population changes of the same magnitude. Discovery of a new technique by a firm in one city may shift the center of that industry, resulting in an exodus of firms from one city and an influx into another. This leads to sudden growth or decline across cities. Population loss can result as skilled workers follow firms to the new center of that industry.²⁰ Alternatively, employment in a city could decline for other reasons, such as changes in technology leading to greater automation at major employers. This may lead to a city with a thriving CBD but a surrounding residential area that is too large for its current population, as seen in Detroit and other manufacturing cities in the Rust Belt.²¹ Urban policymakers faced with either a sudden shock or a steady decline have a natural inclination to revitalize their cities. But should they intervene? And if so, how?

Justifying Policy Responses to Urban Decline

It is not easy to directly test whether people are genuinely left indifferent about moving—by variation in the prices of housing and amenities—within an urban area, a key prediction of the spatial equilibrium model. (See the appendix on page 17 for more detail.) Nonetheless, there seems to be some evidence that supports this implication. Households do not migrate disproportionately to higher-wage cities, for example. Other factors, such as higher housing prices and/or city amenities and disamenities explain differences in wages across cities. Therefore, variations in wages and housing prices across cities should not be sufficient justification for policy intervention. For instance, high wages may be observed in relatively unattractive cities or in cities with higher housing prices.²²

On the other hand, if households face hurdles to moving, policymakers may be able to help people who are “trapped” in declining areas. Often, higher-skilled and higher-income households can more easily move when a neighborhood declines, while poorer and lower-skilled individuals are left behind. Artificial barriers, such as zoning laws or minimum lot sizes, make the process of moving to thriving communities even more difficult. To the extent that such mismatch exists, policy actions to alleviate these frictions could be welfare-improving.

The spatial equilibrium model also provides two justifications for the implementation of policies aimed at revitalizing a declining city.²³ The powerful reinforcing effects of agglomeration economies mean that even small policy changes can trigger large transformations in a city over time, providing an argument in favor of promoting urban renewal. Higher concentrations of people and firms have, on balance, positive effects on almost everyone living in a city. Higher population density means greater learning and sharing of knowledge, more productive firms and workers, and more efficient supply lines and labor matching. Thus, investments may well “jumpstart” these forces in ways that could have benefits that clearly outweigh their costs. In theory, even an announcement that a neighborhood will be revitalized could by itself trigger a variety of positive effects before the government spends any money.²⁴

As noted earlier, agglomeration effects create the possibility of multiple equilibria for a city when they are sufficiently strong. In this case, efforts to “push” a city from a low-employment/low-wage equilibrium (poverty trap) to a high-employment/high-wage equilibrium could be worthwhile. In practice, however, there is little evidence of cities that have moved

from one equilibrium to another. One study looked at the extreme case of the Japanese cities Hiroshima and Nagasaki, which were entirely destroyed in World War II. Following the war, they were rebuilt and returned to their long-run population trends, suggesting that a city's spatial configuration is both unique and stable.²⁵

If policymakers decide that some intervention is warranted, there are a number of different approaches they could consider. One option is to focus on helping households by giving them the tools to improve their situation. This could involve removing barriers that prevent households from relocating to thriving parts of the city, providing housing vouchers to help them move, or improving transportation networks to reduce commuting costs. An alternative approach is to focus on revitalizing the city itself. This includes revitalizing residential or commercial buildings that have declined or offering incentives to employers to locate in the city and hire local people. Economists have labeled these different approaches people-based and place-based policies, respectively.

The ultimate goal of either approach is, presumably, to help people. One of the key responsibilities of policymakers is to consider how effective any given policy might be at achieving that goal. Additionally, the presence of agglomeration economies and social interactions tend to magnify the impact of policies in the context of cities and could, potentially, end up benefitting everyone in the city. However, it remains a challenge to precisely identify and implement those policies that fully exploit and take advantage of the external effects that characterize urban areas.

Revitalizing Places

Enterprise Zones (EZs) are one of the most widely used, and widely studied, forms of place-based policy intervention. EZs designate an area for assistance, typically in the form of tax credits for employers and grants for various development projects. EZs have been implemented on both the state and federal level. Connecticut established the first state-based EZ in 1982, and forty states had some type of EZ by 2008. On the federal level, Empowerment Zones (which are similar to EZs on the state level) were used from 1993 to around 2009.²⁶ Under this program, local governments could apply to the Department of Housing and Urban Development for benefits similar to state EZs. Eleven cities were selected for Empowerment Zones in the first phase of the program, including Atlanta, Baltimore, Chicago, Detroit, New York, and Philadelphia.²⁷

Investment in these various programs has been substantial, but measuring their impact has been challenging. One problem is that targeted areas often don't align neatly with census tracts, zip codes, or other standard geographical boundaries used for collecting data. Another challenge is controlling for other factors that influence local economic conditions and finding appropriate control cases for comparison. A third difficulty is that any benefits attributed to place-based interventions may come at a cost to other regions. For example, persuading a business to relocate from one city to another city benefits the latter at the expense of the former. On the other hand, promoting development in one part of the city may spur private investment that benefits nearby, nontargeted areas. Any empirical study looking to measure the benefits of these programs must account for these positive and negative spillover effects.



Hiroshima was totally destroyed during World War II, but the city eventually returned to its long-run population trend.

Given these challenges, it is not surprising that studies have found mixed effects from state and federal EZ programs. At the state level, an examination of California’s EZ program found no evidence of a significant impact on employment, while an analysis of Texas’ EZs found a positive effect, particularly in lower-paying industries.²⁸ At the federal level, some studies have found positive, statistically significant effects on employment and wages from Empowerment Zones.²⁹ On the other hand, there is also evidence of significantly negative spillover effects on areas geographically near or economically similar to Empowerment Zones, suggesting that at least some of the “gains” may simply be shifted economic activity.³⁰ Whether these programs actually help their intended recipients is also controversial. While more recent EZs require employers to hire locally in order to receive the benefits, not all programs have had this stipulation, meaning some benefits may have accrued to workers who moved to the city with firms rather than to the original target group of individuals.

Other place-based urban policies focus on improving residential buildings and infrastructure. Examples of federal urban renewal programs include the Housing Act of 1949, which provided loans to cities to acquire and redevelop decaying neighborhoods, and the Model Cities Program of the 1960s, which focused more on renewal of neighborhoods rather than wholesale reconstruction. Evidence on the impact of these projects is also inconclusive. Studies don’t suggest they had a meaningful impact on population growth or per-capita income, but that may be due to their relatively limited funding.³¹ Urban renewal projects do seem to generate higher land values—even in nearby neighborhoods not directly targeted, as found in one study of the Neighborhoods-in-Bloom program in Richmond, Virginia.³² One of the main findings of that study is that after accounting for all the external effects generated by this kind of program, the overall benefits may more than compensate for the costs of implementation.

To the extent that urban renewal programs generate higher land values, many of the benefits may accrue to landowners rather than low-income households if those households are mostly renters. For example, one study of the federal Empowerment Zone program found that it had no effect on poverty and employment for residents but a large effect on property prices.³³ Successful urban renewal projects also may end up displacing those households if neighborhoods become more desirable because of new construction.³⁴ An influx of



Photo: ©SuperStock/GettyImages

When Pittsburgh's population peaked in the 1950s, the city's economy relied heavily on the steel industry.

higher-income households may bid up rents and price out the low-income households the renewal projects were intended to help, raising the problem of gentrification described earlier. Policymakers undertaking a place-based approach to reversing urban decline should be mindful of unintended consequences such as these.

Investing in People

Another criticism of urban renewal programs is that they encourage households to remain in neighborhoods with few opportunities. That is, those areas may have declined for a reason, and applying a fresh coat of paint may merely address the symptoms and not the causes of decline. Enticing firms to locate in those areas through EZs could solve this problem, but only if the firms seek the skills possessed by households living in those areas. In light of these challenges, some economists have said that the best thing households in declining city neighborhoods can do is move.³⁵ And to the extent that they are constrained from leaving, policymakers should help them.

In the mid-1990s, the U.S. Department of Housing and Urban Development took this approach with the Moving to Opportunity (MTO) program. The program was implemented in five cities—Baltimore, Boston, Chicago, Los Angeles, and New York—and it provided housing vouchers to families living in high-poverty neighborhoods to help them move to low-poverty neighborhoods. While participation in the program was voluntary, the eligible applicants who received vouchers were chosen randomly, making it a good case study of this policy approach. Some households (the treatment group) received housing vouchers that could only be used in census tracts with poverty rates below 10 percent; others received vouchers with no geographical restrictions (Section 8 vouchers); and the control group received no vouchers and continued receiving public assistance.

Some research has found that for adults, the program seems to have had no lasting effect on earnings or economic self-sufficiency.³⁶ Moreover, of the households offered a voucher to move to lower-poverty neighborhoods, less than half accepted, and some that did move later moved back.³⁷ For children, the evidence was mixed. Those who were younger than thirteen when they moved to a lower-poverty area seemed to benefit. Compared with children in the control group, they had incomes that were about \$3,500 (31 percent) higher on average in their mid-twenties, were more likely to attend college, and were less likely to become single parents. On the other hand, children who were older than thirteen when they moved suffered



worse long-term outcomes, possibly because they already had established social networks in their old neighborhoods and disrupting those networks caused more harm than good.³⁸

More recent research examines the outcomes of similar housing voucher programs and finds more favorable evidence of this type of policy. From a research standpoint, the fact that participation in the MTO experiment and the use of the housing vouchers was voluntary introduces potential self-selection bias into the results of the experiment. Some children could have benefitted from the relocation to a low-poverty neighborhood, but since their parents were not really motivated to move, they did not participate in the program. To overcome this problem, one study focuses on the outcomes of a specific program that involved the mandatory relocation of households to other neighborhoods because the public housing where they lived was set to be demolished. This study concludes that the relocation of households had large and positive effects on children (they were more likely to be employed and earned higher wages as adults), and these effects were substantially larger than those found in the MTO experiment. This suggests that the children who did not participate in the MTO experiment were very likely those who could have benefitted most.³⁹

Rather than attempting to move residents to more prosperous areas, another people-based approach is to improve residents' human capital. Certainly investing in education and human capital has benefits on the individual level. But having a more educated, more productive urban population has positive spillover effects on the city as a whole, too. In fact, these spillover effects seem to play a key role in defining modern successful cities. In the early post-World War II era, city growth was tied to high concentrations of physical capital, like the car factories of Detroit or the steel mills of Pittsburgh. But since 1980, human capital has become a more reliable indicator of a thriving city. Average wages in cities with highly educated populations, such as Boston or San Francisco, are much higher for both college graduates and high school graduates than in cities with low levels of college education.⁴⁰

There may be other spillover benefits as well. Individuals with more education are significantly less likely to commit crimes. Thus, increasing high school graduation rates (for men in particular) seems to provide substantial social savings to cities in the form of less crime.⁴¹ Raising human capital levels and the number of high-skilled jobs in a city also has a multiplier effect. One study found that for each new job in an innovative field added to a city, five additional jobs were created. This includes high-skilled jobs (such as lawyers, teachers, or nurses), and low-skilled jobs (such as waiters, baristas, or taxi drivers).⁴²

Pittsburgh's population is less than half what it was in the 1950s, but the city's economy is more diversified.

When considering policies, something to bear in mind is that cities are far from identical. The forces that gave rise to the movie industry in Los Angeles or the auto industry in Detroit may not be replicable elsewhere.

Cities with higher levels of human capital also tend to attract more individuals with high levels of human capital, creating clusters of innovation, such as Silicon Valley near San Jose, California, or the Research Triangle in Raleigh, Durham, and Chapel Hill, North Carolina. What is less certain is whether policymakers in declining cities can create new innovation clusters by investing in universities or other research institutions. Empirical evidence does suggest that such investments could have lasting benefits for a city, but many of these studies examine the effects of well-established universities on a region. It is more difficult to say for certain what leads individuals and firms to cluster around certain institutions and not others, and it is unclear whether attempting to create such clusters out of whole cloth would succeed. Moreover, the greater mobility of highly educated individuals may reduce the ability of cities to fully benefit from investments in human capital. If a declining city doesn't already have an innovative sector to employ newly trained individuals, those individuals may choose to leave the city after completing their education, taking their human capital with them.

Taking a Balanced Approach

The urban economics literature has much to say about our increasingly urban world. First, agglomeration economies are powerful forces that have led to the dramatic urbanization of the world's population over the past two centuries. These forces have fed into each other to generate remarkable economic growth. These feedback effects mean that even small changes to a city can have a large impact over the long run. Urban policies are often thought of in terms of large-scale projects: building a new sports complex or business center, redeveloping whole neighborhoods, or adding new public transportation infrastructure. But spatial models of cities suggest that small-scale projects could be just as effective at promoting city growth.

Creating growth through new industries may be more challenging than maintaining or restoring existing industries in a city, however. Because agglomeration economies arise organically, it is hard to say what incentives could attract new firms to locations they previously avoided.⁴³ When considering policies, something to bear in mind is that cities are far from identical. The forces that gave rise to the movie industry in Los Angeles or the auto industry in Detroit may not be replicable elsewhere. Moreover, policies that generated a positive response in one city have no guarantee of doing the same in another. As the studies we've highlighted illustrate, policies implemented in the complex social environment of cities may trigger all sorts of unanticipated responses. This doesn't mean that policymakers can draw no lessons from experiments in other cities, but the key lesson is to proceed with caution.

Finally, while this essay has presented examples of both place-based and people-based policies, these should not be viewed as mutually exclusive. There may be practical limitations to how far city leaders can take any one approach. Emptying out a declining neighborhood may seem like the efficient choice in an economic model, for example, but it may not be a realistic solution. Rather, policymakers should consider a mix of responses that would be most appropriate for their respective cities. Two main questions should guide their choices. First, are there policies that, in the spatial context of cities, can potentially improve the well-being of nearly all residents? Second, to what extent do more targeted policies help their intended recipients? ■

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Basic Urban Equilibrium

Location decisions of households

Consider a linear city, where identical households commute between their place of residence and place of work, the central business district (CBD). The distance from a household's residence to the CBD is x (the CBD is located at $x = 0$). The commuting cost per mile is denoted by t , which is assumed constant. Total commuting costs for a consumer residing x miles from the CBD is tx . All households earn an exogenously given income w . Disposable income for a household residing x miles from the CBD is $w - tx$. Households consume two goods: a nonhousing good, c , and land, denoted by ℓ . The simplest version of the model assumes that residential consumption of land is given and equal to one, i.e., $\ell = 1$, and preferences are represented by the utility function $v(c) = c$. The price of the nonhousing good is equal at all locations and it is normalized to one, and land can be rented at r per acre. The budget constraint is $w - tx = c + r$. Households are perfectly mobile within an urban area (and across cities), which implies that at a locational equilibrium all households achieve the same level of utility. In our model, this means that $u = w - tx - r$ for all x , where u is taken as exogenous. From this equilibrium condition, we obtain the land-price gradient $r \equiv r(x, w, t, u) = w - tx - u$. The latter is usually referred to as the residential land bid-rent function since it actually represents the maximum rent a household is willing to pay for land at different locations. Note that $\partial r / \partial x = -t < 0$, so that residential land rent declines as distance from the CBD increases. This condition has the following interpretation. As households move one mile farther away from the CBD, commuting costs increase by t . Households would be indifferent between staying and moving to the new location if the decline in land rents fully compensate for the additional commuting costs.

Location decisions of firms

Suppose that each firm produces a fixed amount of output q employing one unit of land and structure capital. The price of q , denoted by p , and the cost of structure, denoted by C , are given and do not change with x . Firms pay the land rent r_f , where r_f changes with x . Firms can set up their production facilities at any location x . However, the products have to be taken to the port or transportation terminal, located at the CBD, for delivery to their final destinations. The cost of transporting one unit of q per mile is t_q , so total transportation costs to the CBD for a firm located at x are $t_q x q$. Profits at location x are consequently given by $\pi = pq - C - t_q x q - r_f$. Perfect competition and free entry of firms drive profits to zero at every location, so the highest land rent a firm is willing to pay at x is:

$r_f \equiv r_f(x, p, q, C, t_q) = (p - t_q x)q - C$. The slope of the firm's bid rent is $\partial r_f / \partial x = -t_q q$.

Land use and equilibrium city size

Land can be rented to firms, households, or used for agriculture. Agricultural land rent is given by r_A . Absentee landlords rent the land to whoever is willing to offer the highest bid. The relative slopes of the bid-rent functions, as a result, determine how the land is used. The diagram on page 9 shows a situation in which the slope of the firms' bid-rent function is steeper than the slope of the residential bid-rent function, i.e., $t_q/q > t$. The two curves intersect at $x = \bar{x}$, which defines the border between firms and households. The size of the city in the diagram is given by the distance from the CBD to the city-rural boundary, denoted by \bar{x} , and it is determined by the intersection of the residential bid-rent function and the horizontal line r_A . As a result, all locations $x < \bar{x}$ are occupied by firms, all locations $\bar{x} \leq x \leq \bar{x}$ are occupied by households, and all locations $x > \bar{x}$ are devoted to the agricultural use. Specifically, the city size \bar{x} is determined by

$$r(\bar{x}, w, t, u) = r_A \tag{1}$$

Also, in equilibrium, the city's population, N , should fit in the city, or

$$\int_0^{\bar{x}} dx = N. \tag{2}$$

Consider a situation in which there is costless migration across cities (usually referred to as an "open city model"), so the city's population adjusts until utility is equalized everywhere at utility level u . Substituting $r(x, w, t, u)$ into (1) and solving for \bar{x} , it follows that $\bar{x} = (w - u - r_A)/t$, and from (2), $N = \bar{x}^2/2$. Note that since $r(x, w, t, u) - r(\bar{x}, w, t, u) = t(\bar{x} - x)$, then the equilibrium residential bid-rent function is

$$r(x, w, t, u) = r_A + t(\bar{x} - x).$$

Endnotes

- 1 Cohen (2015).
- 2 Manyika et al. (2012).
- 3 Moretti (2013, 84) and Jaffe, Trajtenberg, and Henderson (1993).
- 4 More recently in the 2000s, following the nationwide trend, poverty has been rising in the suburbs as well. However, poverty is still a phenomenon highly concentrated in inner cities.
- 5 The Census Bureau began tracking “standard metropolitan areas” with the 1950 census. These were later renamed MSAs, and the boundaries have changed over the decades following the fluctuations of cities. Data are from the 1950 Census and 2010 Census.
- 6 Audretsch and Feldman (1996) and Glaeser (1999).
- 7 Moretti (2004).
- 8 De la Roca and Puga (2016).
- 9 Black (1999) and Bayer, Ferreira, and McMillan (2007).
- 10 Rosenthal and Ross (2015).
- 11 Glaeser, Kahn, and Rappaport (2008).
- 12 Baum-Snow (2007) and Duranton and Turner (2012).
- 13 Baum-Snow (2007).
- 14 Baum-Snow and Lutz (2011). Other studies focus on different explanations for “white flight,” such as rising crime rates in cities. See Cullen and Levitt (1999) and Boustan (2010).
- 15 Glaeser, Kolko, Saiz (2001) and Albouy (2012).
- 16 Brueckner and Rosenthal (2009).
- 17 Guerrieri, Hartley, and Hurst (2013).
- 18 O’Sullivan (2005).
- 19 Glaeser and Gyourko (2005).
- 20 Duranton (2007).
- 21 Owens, Rossi-Hansberg, and Sarte (2017).
- 22 Glaeser and Gottlieb (2008).
- 23 Kline and Moretti (2013).
- 24 Kline and Moretti (2014).
- 25 Davis and Weinstein (2002).
- 26 The Empowerment Zone designation generally expired in 2009, though it was subject to a series of case-by-case extensions.
- 27 Ham, Swenson, Imrohoroglu, and Song (2011).
- 28 Neumark and Kolko (2010) and Freedman (2013).
- 29 Busso, Gregory, and Kline (2013) and Ham, Swenson, Imrohoroglu, and Song (2011).
- 30 Hanson and Rohlin (2013).
- 31 Glaeser and Gottlieb (2008).
- 32 Rossi-Hansberg, Sarte, and Owens (2010).
- 33 Hanson (2009).
- 34 Several studies show that EZ programs could have generated demographic changes in affected neighborhoods. Neumark and Simpson (2015).
- 35 Glaeser (2005).
- 36 Kling, Liebman, and Katz (2007).
- 37 Clampet-Lundquist and Massey (2008).
- 38 Chetty, Hendren, and Katz (2016).
- 39 Chyn (2016).
- 40 Moretti (2004) and Moretti (2011).
- 41 Lochner and Moretti (2004).
- 42 Moretti (2013).
- 43 Rosenthal and Strange (2006).

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