



# Cities in Transition

Baltimore, Maryland

November 3, 2017



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# Advancing Our Understanding of Urban Economics



## Mark L. Mullinix

Interim President and Chief Executive Officer  
Federal Reserve Bank of Richmond

Good afternoon. We're pleased you have joined us to hear firsthand about some of the most interesting and relevant research being done in the field of urban and regional economics. All of us at the Richmond Fed hope this is just one of many opportunities we'll have to collaborate and exchange ideas.

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Before I share any of my own ideas, I should note that the views I express today are my own and not necessarily those of the Federal Reserve System or any other member of the Federal Open Market Committee.

Why is the Richmond Fed interested in urban economics? In a sense, the answer can be traced back to 1977 and the passage of the Community Reinvestment Act (CRA). This law was intended to discourage "redlining," or, more precisely, to encourage banks "to help meet the credit needs of local communities in which they are chartered." The CRA set up a process by which citizens and community groups could protest if they believed a bank was discriminating against a particular neighborhood. Initially, community groups needed help navigating the administrative process of filing a protest, so some Reserve Banks set up functions to provide that help. The Board of Governors asked every regional Reserve Bank to establish a similar function, and by 1981, community development had a presence throughout the System.

This presence has evolved over the years. As community groups became more skilled at navigating the protest process, they needed less assistance doing so. At the same time, banks and community groups were increasingly seeking each other out: Banks were looking for community investment opportunities, and community groups

were looking for funding. So we shifted into more of a facilitator role — bringing together community groups, financial institutions, and other stakeholders to provide people and businesses in low- and moderate-income neighborhoods with tools and resources to address credit and development issues.

For nearly three decades, then, understanding the constraints and the opportunities in communities throughout our district has been part of our mandate. More recently, here in Richmond we have been expanding on that mandate by investing the resources of our research department in studying urban areas specifically.

As you all know, most economic activity takes place in cities. In our district, which includes Virginia, Maryland, Washington, D.C., the Carolinas, and most of West Virginia, metro areas generated more than 90 percent of economic output in 2015 and were home to more than three-quarters of the population. Just three cities — Baltimore, Charlotte, and Richmond, where our three branches are located — account for 20 percent of our district's population and nearly one-quarter of its GDP. As a regional Reserve Bank, we want to understand what contributes to — or inhibits — economic vitality in our region, and understanding cities is an important part of the equation.

Not all cities are the same, of course. Our region boasts some of the nation's most culturally and

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economically vibrant cities, but we also have cities suffering persistent decline. And even within relatively prosperous or fast-growing cities, there are pockets of deeply entrenched poverty that policymakers have struggled to redress. In recent years, for example, we've become tragically aware of the serious challenges facing many neighborhoods in Baltimore — challenges whose roots go back many decades and for which solutions do not seem to be near at hand.

OK, you might be thinking, but why isn't the Richmond Fed just sticking to monetary policy? Part of the answer is that studying our region is essential to conducting monetary policy. For example, what's happening in one area or one sector might be a harbinger of things to come for the economy as a whole. And national statistics such as the unemployment rate mask significant disparities between people in different areas of the country or different demographic groups. The fact that, in October, the economy added 216,000 jobs and the unemployment rate for the nation was 4.1 percent doesn't mean that rural West Virginians or inner-city Baltimoreans have an easy time finding jobs.

The other part of the answer is that monetary policy isn't the right tool to address these disparities. Effective monetary policy creates an environment conducive to economic growth and job creation, but it doesn't affect the many other real variables that influence when and where economic growth occurs — such as a region's initial endowments of land or natural resources, transportation patterns, changes in technology, or even changing tastes in where people want to live. Monetary policy is a blunt instrument — addressing the unique challenges facing Baltimore or any other city requires finesse.

That's why your work is so exciting and so important. People in this room today have contributed to developments in urban economics that enable us to model cities in incredibly rich detail and make sure that any counterfactual policy experiment is based on a city's current, specific reality. I think that's an incredibly promising direction for economists and policymakers to pursue. Of course, I don't think it's going to provide us with

a silver bullet to solve the problems faced by far too many people in far too many cities across our country — I'm looking at a lot of really smart people, and I think if there were a silver bullet, you would have found it already. These are incredibly complex and difficult questions, and the solutions are likely to be years in the making. The Richmond Fed is proud to be playing some role in helping to advance the science, and we are committed to that effort for as many years as it takes.

Before I let you get back to finishing your lunch — and thank you very much, Dave Beck and your staff here in Baltimore, for providing us with such a good meal — let me emphasize that we do not view our role as coming up with the "right" solutions or prescribing specific solutions to policymakers. Our role is as a convener and a disseminator; we want to bring together the best researchers (including our own economists, of course) and help get that research into the hands of policymakers so they can design the most effective solutions for their unique places and people.

Thank you again for joining us, and I'm sure you will find the afternoon presentations just as interesting and informative as the ones this morning. ■

A handwritten signature in blue ink that reads "Hank Hille". The signature is fluid and cursive, with a small flourish at the end.

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# Cities in Transition

Federal Reserve Bank of Richmond, Baltimore Branch

November 3, 2017

- 9:00 AM**     **Welcome and Introduction**  
Dave Beck, Senior Vice President and Baltimore Regional Executive, Federal Reserve Bank of Richmond
- 9:15 AM**     **Accounting for Central Neighborhood Change, 1980-2010**  
Nathaniel Baum-Snow, University of Toronto
- 10:00 AM**     **The Lifecycle of Land: Evidence from the U.S., 2000-2010**  
Matthew Turner, Brown University
- 10:45 AM**     **Break**
- 11:15 AM**     **The Welfare Implications of Urban Gentrification**  
Erik Hurst, University of Chicago
- 12:00 PM**     **Lunch Speaker**  
Mark Mullinix, Interim President and CEO, Federal Reserve Bank of Richmond
- 2:00 PM**     **Rethinking Detroit**  
Esteban Rossi-Hansberg, Princeton University
- 2:45 PM**     **On the Dynamics of Segregation**  
Donald Davis, Columbia University
- 3:30 PM**     **Break**
- 4:00 PM**     **Immigrant Locations and Native Residential Preferences:  
Emerging Ghettos or New Communities?**  
Albert Saiz, Massachusetts Institute of Technology
- 4:45 PM**     **Closing Remarks**  
Kartik Athreya, Executive Vice President and Director of Research,  
Federal Reserve Bank of Richmond
- 5:00 PM**     **Reception**

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Spofford, Edward W., Norman T.A. Munder & Co., and Spofford & Hughes. A birds-eye view of the heart of Baltimore. Baltimore, Norman T.A. Munder & Co., 1912. Map. Retrieved from the Library of Congress, <https://www.loc.gov/item/75694536>. (Accessed March 14, 2018.)

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## Conference Summary

Neighborhoods and cities go through periods of sharp population growth and decline. As households move in and out of neighborhoods, the demographic composition and the economic status of those neighborhoods change. All these changes develop slowly over long periods of time. The inflow of people into a city results, in some cases, in the development of new sites and the expansion of the city. In other cases, it spurs the redevelopment of previously built areas. The latter may lead to a change in the economic status of neighborhoods through a process usually known as gentrification, which essentially involves the displacement of existing low-income residents by wealthier newcomers. Urban gentrification has become more common in the last two decades, and it positively correlates with rising house prices, an increase in the valuation of certain types of amenities offered by some neighborhoods located in the central city, and a decline in the number of poor residents in those areas. Population also declines in absolute numbers in some neighborhoods, resulting in abandoned properties and vacant land. An important part of the academic literature in urban economics has devoted a lot of attention to, first, describing the changes that have been taking place across space and, second, understanding the drivers of those changes and evaluating their effects on neighborhoods and cities. The work that was presented by six researchers at the “Cities in Transition” conference, held at the Richmond Fed’s Baltimore branch office, is part of this ongoing broader research agenda.

The work by Matthew Turner of Brown University and co-authors describes the patterns of development and redevelopment of land in the

United States from 2000 to 2010. They examine how land use has changed across space as people and employers move. Their approach, which is essentially descriptive, is novel since it combines data from the National Land Cover Database (NLCD) with other sources for several years. The NLCD provides spatial information about the characteristics of different pre-defined land cells, including information about land use (urban, agriculture, forest), share of the land that is impervious, and the proportion of tree canopy cover. Among other things, these data have the advantage of covering fixed delimited areas whose borders do not change across time, as opposed to other frequently used data available at the metropolitan statistical area (MSA) or county level. Using these data, they are able to document several interesting facts. Among the most salient, they show first that the percentage of land developed has not changed that much from 2000 to 2010. However, an important fraction of the areas have seen increases or declines in employment and population. Second, the data show that changes in employment and population from 2000 to 2010 vary greatly across space. The variations, the authors claim, are mainly related to mobility within the MSAs rather than migration across regions. Overall, the study seems to suggest that the rise and fall of jobs at different locations and population mobility are mainly associated with large levels of land turnover rather than with the development of new areas or the expansion of existing ones.

Nathaniel Baum-Snow of the University of Toronto and Daniel Hartley of the Federal Reserve Bank of Chicago; Erik Hurst of the University of Chicago and co-authors; and Donald Davis and Iain Bamford of Columbia University focus more on the demographic changes that have been taking place in the United States during the 1960-2010 period.





The work by Baum-Snow and Hartley begins by documenting such demographic changes. They distinguish the changes occurring between two subperiods. From 1960 to 2000, the population in central neighborhoods relative to the MSA population declined sharply in the largest MSAs. A large part of the change was driven by the departure of lower-educated white residents from the central city. After 2000, central neighborhoods experienced an increase in population along with an influx of white residents. A decline in the rate at which lower-educated white residents left central neighborhoods and a large number of higher-educated white residents moving into those areas explain the change in trend. However, what are the underlying economic factors driving first the decline, and later the gentrification, of central neighborhoods? Baum-Snow and Hartley develop a model that compares the relative importance of different mechanisms, including changes in labor market opportunities, housing costs, and amenities. After assessing the relative importance of these alternatives, they conclude that shifts in neighborhood choices were mostly explained by the increase in the valuation of amenities found in downtown neighborhoods.

The work by Hurst and co-authors also examines the determinants of central neighborhood gentrification. Their explanation attaches a key role to amenities as well. The cost of producing certain types of amenities is relatively low in central neighborhoods, and, moreover, higher-income households value those amenities more than other income groups (in other words, they are luxury goods). As a result, when high-income households get richer, their demand for central neighborhood amenities increases, so they will move to the central city and displace the poor. One of the main

contributions of their work is to separate the impact of gentrification on income inequality from its effect on welfare. Their preliminary results suggest that the change in welfare due to higher income inequality tends to understate the actual changes in welfare once the spatial sorting of households is taken into account. In fact, the underestimation of welfare is more pronounced for very low-income households, since they are displaced in large proportions from central neighborhoods as a result of gentrification.

Gentrification usually describes a situation in which relatively wealthy newcomers displace existing poor residents in an area. However, gentrification is also associated with racial segregation. As documented by Baum-Snow and Hartley, central neighborhood gentrification after 2000 implied, among other things, a shift in the demographic composition in those areas toward predominantly white residents. The work by Davis and Bamford, on the other hand, focuses on the literature on racial segregation. Specifically, they examine the ability of traditional tipping models to explain racial segregation due to gentrification. Tipping models — originally developed by Thomas Schelling in his 1971 paper, “Dynamic Models of Segregation,” and later extended by David Card and co-authors in their 2008 paper, “Tipping and the Dynamics of Segregation” — offer a very insightful way of thinking about segregation. The basic idea is that the dynamics of social interactions within a neighborhood between different groups, for instance, minorities and whites, is such that when the share of minorities exceeds a critical or “tipping point,” whites will leave. In other words, the neighborhood will become completely segregated.

Davis argues in his presentation that these simple models have important limitations, as some of their predictions conflict with some of the evidence.



Among the weaknesses of these models, Davis underscores the following. First, tipping models concern single neighborhoods, so they do not account for clusters of residents in the area, a feature that is present in the data. Second, tipping models predict too much segregation in the long run. This means neighborhoods that tip converge to complete segregation. They also predict that neighborhoods that do not flip remain stable. Third, the models include only two groups of residents, but in reality there is a lot of heterogeneity within the minority group. Fourth, the basic models are not suited to explain “untipping,” in other words, gentrification. These models explain shifts in one direction but not the other, which means they have nothing to say directly about how a predominantly minority neighborhood could become a white neighborhood. In his work, Davis suggests and develops a framework of analysis that extends the traditional tipping models, which can accommodate and overcome some of the drawbacks and limitations of the simple setup.

While the tipping models reviewed by Davis characterized neighborhood demographic changes taking place slowly over time, Albert Saiz and co-authors consider the impact of sizable and relative sudden changes in city population due to the inflow of immigrants. Their study focuses on a large inflow of immigrants into Spain from 1998 until 2008, which increased the population of the country by 10 percent. They show that the arrival of immigrants had a number of effects. First, it induced a small decline of native residents from some established neighborhoods. Second, it caused the development of new housing in those neighborhoods. And third, both natives and immigrants moved into booming suburban communities. As a result, the overall level of ethnic segregation did not change that

much. One important contribution of this work is that it identifies a novel type of neighborhood dynamics not captured by the traditional tipping and segregation models, namely the development and construction of new neighborhoods.

In some cities, central locations have simply experienced large and sustained declines in population. The consequences in the local area have been remarkable. The city of Detroit is one of the most cited examples of such phenomena. An aerial view of the city reveals a relatively vibrant central business district surrounded by a ring of practically deserted neighborhoods with abandoned or demolished houses and buildings. Redeveloping those areas has been very challenging. But why has it been so difficult, considering that the vacant areas are relatively close to the central employment center and land prices there are low? Esteban Rossi-Hansberg of Princeton University and Raymond Owens III and Pierre-Daniel G. Sarte of the Federal Reserve Bank of Richmond attribute the failure of individual efforts to revitalize the area to the lack of coordination among developers and residents. They evaluate how a specific policy, a local government guarantee of residential investment, could stimulate the redevelopment of neighborhoods in cities such as Detroit. The implementation of this policy entails the city government contracting with local builders for the construction of a specific number of housing units in targeted neighborhoods. In this way, sufficient housing and population density would be generated, making local amenities financially viable. An interesting implication of this government guarantee is that private sales could potentially absorb all residential units, making the policy costless to the local government. ■



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# Accounting for Central Neighborhood Change, 1980-2010

by Nathaniel Baum-Snow and Daniel Hartley

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While the centers of many U.S. cities experienced population declines from 1980-2000, they witnessed residential growth and revitalization from 2000-2010. An influx of college-educated whites into city centers seems to be one factor

driving this change. Additionally, outflows of less-educated whites that largely drove declines in previous decades stopped. Nathaniel Baum-Snow of the University of Toronto and Daniel Hartley of the Chicago Fed find that these changes may be explained by a change in how college-educated and less-educated whites value downtown amenities. Baum-Snow discussed their paper at the conference.

***A lot of the urban economics literature has focused on the issue of declining American cities. But your paper seems to suggest that we should be talking more about urban revitalization.***

**Baum-Snow:** There's a reason that the literature is focused on declining American cities. I've written some of those papers too. There was a lot of decline after World War II, and it wasn't until around 2000 that you saw any part of central cities of U.S. metropolitan areas start to revitalize. Start to have some population and income growth. I want to emphasize that it's still a very small portion of the land area. It's really localized, within say five kilometers of downtowns. So there's a lot of space left over in central cities that are still declining. But I would expect this revitalization to slowly move outward from the center. There's some evidence that has already happened. You saw a little hint of it

in the 1980s and the 1990s, and it really expanded outwardly from central business districts between 2000 and 2010.

***What are some of the key factors that drove the declines from the center in the 1970s and 1980s, and what changed more recently?***

**Baum-Snow:** I have some work that's about the role of highways and highway construction. That was a first-order factor driving urban decentralization. In the 1980s, the rate of highway construction kind of started to trail off. They no longer were building highways serving downtowns. Then existing highways became congested, and so that force stopped being important for understanding changes to city centers. That was one thing. A second thing that has been talked about a lot, in particular with respect to low-skilled jobs, is the fact that the structure of the economy has changed such that low-skilled labor demand is now much more oriented toward the suburbs. You've had separation between the headquarters and management operations and housing. Those used to be in the center of the cities near the rail hubs and the ports. After World War II, that all moved to the suburbs.

***Is that a highway story?***

**Baum-Snow:** That's a highway story. The highways facilitated that. And they just started using trucking a lot more. So there's been this big decentralization of jobs, particularly low-skilled jobs that you could say interacted with highways. Then I think a lot of cities got stuck in this bad situation where they had some erosion of the tax base and the city services got worse. That also meant amenities declined, and that snowballed into a lot of the urban challenges that



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started popping up in the 1960s. We still see today in some cities like Baltimore that those negative amenities have made it hard for the cities to bounce back. And they've been stuck in this bad situation with a lot of poor residents, low tax base, poor quality schools, and high crime rates, and it's really hard to get out of that. So I think the revitalization of the central business district makes sense. These were areas where there was infrastructure that could support growth in amenities, as we saw in Erik Hurst's paper. But also they are areas that are easy to target for revitalization by city, state, and federal governments. It's kind of natural. If you wanted to think about how to try to stabilize a city like Detroit, for example, you would want to make sure that the downtown is nice place to go. So we can invest some in the downtown and that's easier to agree on from a political economy standpoint than choosing a particular neighborhood.

*I assume there's also a tourism component to that too? City leaders want to attract tourists to the downtown.*

**Baum-Snow:** Exactly. So then you have some tourist-oriented infrastructure, like a convention center, some hotels that are left over from when there was a lot more employment there. So you have this infrastructure that's already in place that makes that sort of thing more likely to be successful in the downtown.

*That gets into what you talk about in your paper about how it's the amenities that seem to be attracting higher-income, college-educated whites back to the center of the city.*

**Baum-Snow:** So we actually find something very consistent with what Erik was showing. After holding the employment composition and the employment level of the central business districts constant, metro areas that had more income growth, which especially is driven by the top, had more rapidly revitalizing downtowns. It could be that the amenities increased more rapidly there, but it also could be that the

existing amenities there experienced increases in demand because as people got richer, especially at the high end of the income distribution, they demanded more of those downtown amenities. And the way to access them is to live near them.

*Do we have any sense of what those amenities are?*

**Baum-Snow:** So I think when you talk to Erik Hurst or Jessie Handbury and Victor Couture, they have very good measures of things like restaurant diversity and other types of local amenities and how they've changed since 2000. I think if I had to guess it would be just what Erik said, the sort of so-called nondurable services like restaurants, bars, and coffee shops, things like that. Things that rich people in particular want to consume a lot of and poor people don't really care about.

*And I assume the other component of that is sort of that the development runs both ways.*

**Baum-Snow:** Right, there's a multiplier.

*So as more people move in ...*

**Baum-Snow:** It supports more of those sorts of establishments.

*So it might be too early to tell, but is this the start of a renewal cycle for many American cities, where you've got the old infrastructure in the city center that maybe has deteriorated to some degree and is now becoming revitalized? And just as the city originally built out, this revitalization starts in the central business district and it moves outward?*

**Baum-Snow:** Yeah, I think there is some element of this so-called filtering of the housing stock and building stock. A lot of these downtowns were built up around 100 years ago, and that's more or less the life cycle of a lot of buildings. Houses can be kept up and maintained longer, but a lot of the buildings that were built in downtowns 100 years ago or so, they're not very valuable today because they're obsolete.

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And so you can get these cycles where at some point it makes sense to tear it down or replace it with a modern structure. And I think that some of what's going on is that sort of phenomenon. But I think probably a bigger factor is just the fundamental demand changes, especially by high-income people, and I think that is going to expand outward from the central business district. Maybe not in all directions, but I think there's continued income growth at the top and that means that, at some point, a greater fraction of the population is going to have a high demand for these sorts of downtown amenities, and that's got to result in more growth of high-income people living near downtown. They've got to live somewhere so it's going to cause some expansion.

***Are there notable exceptions of cities? City centers that haven't experienced this growth in the 2000s?***

**Baum-Snow:** There are, yes. The cities that didn't experience downtown revitalization were disproportionately old manufacturing cities. Not the biggest ones, but medium-sized ones where the preponderance of the economy is in manufacturing. In places like Youngstown, Ohio, this revitalization hasn't happened. I think that's just because there are no high-income people left there. The fraction of college graduates in a place like Youngstown is much lower than average. We have a list in our paper of the top and the bottom cities, and the bottom had that sort of profile: medium-sized, manufacturing-oriented cities.

***In addition to this influx of higher-income, higher-educated whites in this period, you also found that lower-income and less-educated whites have stopped leaving downtown areas. What explains that?***

**Baum-Snow:** I think there are two things. One is they are sensitive to where the jobs are, and downtown employment stopped declining. An important part of what caused them to leave before 2000 was the fact that there was decentralization of employment. That basically stopped after 2000, and so that was part of what caused them to stop leaving. On top

of that you also have a reversal in their amenity valuation of downtowns, just like you had for the college whites. And those things together caused them to stop leaving. However, perfectly consistent with Erik's paper, in the places where their incomes were growing faster, they continue to decentralize more quickly. It looks like downtown amenities may have stopped declining and started increasing a little bit for them, but they still value the suburban amenities more than the downtown amenities. So you have cessation of labor market impacts causing them to leave; you have improvements in downtown amenities a little bit that also caused them to value downtowns more in 2000 to 2010. But to the extent that their incomes grew, and they didn't grow very much because the income distribution has been pretty stable near the bottom while it has increased a lot at the top, that continued to push them to the suburbs. They value the schools, the extra space, and maybe the well-run local governments of the suburbs. The high-income people value those downtown amenities, and if they have kids, they can send them to private schools. That's the story that makes all this fit together.

***In your paper, you also note that minorities are still leaving the center cities, which could be a result of this gentrification. Should local city governments be doing anything to help smooth the transition of gentrifying downtowns?***

**Baum-Snow:** So, there are a few points for consideration. One is that gentrifying downtowns improves the tax base in the city, and that's valuable. That could potentially make everybody in the city better off if it gets rebated back appropriately. So you could lower property tax rates, which gets capitalized into lower rents for incumbents. And you could compensate the people who are pushed out from the centers.

One of the things that I wonder about is what that moving cost is. It could well be that the poor don't really care so much where they live as long as it's cheap. So if it gets more expensive where they live, they just move somewhere else that's cheap.

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As long as there's a cheap neighborhood to live in that's available, then it's not too costly. They're basically indifferent. There's a bit of a moving cost, but you actually see in the data that the very poor move around a lot within the same city, often because they find that they can't pay their rent and they've got to find a new apartment as a result, move in with family for a while, or something like that. So as long as there's a cheap place to live, maybe the welfare costs are not so high. I think that's got to depend a lot on the city. So in that sense, there's this gain from an improved tax base, and maybe the costs aren't so high. On the other hand, maybe they are high. It really just depends on what the moving cost is for incumbents and what the availability of alternative cheap neighborhoods is.

Now the fact that you saw continued outflows from central neighborhoods of less-than-college minorities, we back that out and interpret that as continually declining amenities in downtown

neighborhoods for this group relative to other neighborhoods. It would be interesting to think about the counterfactual had the high-income amenities and population growth not occurred in downtowns. What would that outflow look like? I don't think we know the answer for sure, but the fact that the rate of outflow was about the same once this started turning around for the high-income people as before it did, maybe that is some indication that it's not that costly for low-income households. Now, the calibration in Erik's model says otherwise. So I'm not sure. Just looking at the patterns in the data indicates that maybe it's not too costly that this is happening. In that case it would only be a positive for cities. But look at Baltimore, you have a lot of underpopulated neighborhoods in Baltimore where housing is almost free. You take a bit of a hit on amenities for sure, and you maybe have a little bit longer commuting cost. So there are some costs there. But maybe it's not so much. ■

## The Lifecycle of Land: Evidence from the U.S., 2000-2010

by Gilles Duranton, Henry Overman, Diego Puga, Tanner Regan, and Matthew Turner



Land use is dynamic: Firms grow, shrink, or close, and people have families, move, and die. This leads to varied use of particular land areas over time. Gilles Duranton of the University of Pennsylvania, Henry

Overman of the London School of Economics, Diego Puga of the Centro de Estudios Monetarios y Financieros (CEMFI) in Madrid, Tanner Regan of the London School of Economics, and Matthew Turner of Brown University are

investigating the factors that cause specific locations to undergo change (including not being used at all) in a world where metropolitan areas are becoming increasingly decentralized. Turner discussed their paper at the conference.

*Could you briefly discuss the motivation for the paper?*

**Turner:** We're accustomed to thinking about there being a life cycle in the employment of people, where people have jobs, lose jobs, get retrained, and find new jobs. And we're used to thinking of land decisions as being once and for all, but we



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know that's not right. We want to think about the process of land being used, then being unused, and then being used again — and those cases where it does go unused and may remain unused. When you look around Rhode Island, for instance, you see these abandoned factories and old mills that look like they have been empty for 50 or 80 years — and those cases seem like they may be permanent. How common is that?

***When you refer to “churning,” what do you have in mind? And how does that look relative to the change in level?***

**Turner:** First, “churning” is a word that we are using now, but it's not a formal term and hopefully we will abandon it as the paper develops. But basically what we see are a lot of high-frequency changes in the intensity of land use. That's what we mean by churning. So when we look at the data, we see that over a 10-year period the mean change in any parcel of land is really big compared to the mean change in the city overall. So there are a lot of changes in the intensity of use for particular places, such as employment per square kilometer and residential use per square kilometer, even though the average intensity of use over a metropolitan area doesn't change very much.

***How do you measure the intensity of use of a particular parcel of land?***

**Turner:** For each one-kilometer cell, we're concentrating on three things. First, the share of impermeable cover, which is a measure of how much built stuff is there; second, the number of people who live there according to the Census; and third, the number of people who work there according to the Zip Code Business Patterns data. We observe those things twice, once in 2000 and once in 2010. The presentation I gave was concentrated on demonstrating that there are big changes in those things — the mean change in any of those things at the level of a one-kilometer cell is big compared to the mean change of the whole metropolitan area.

That's what you see in the pictures I showed. Also, not only is the change big relative to the average of the metropolitan area, you see big increases next to big decreases, creating these surprising patterns. Over the course of a couple of kilometers you'll go from places that are declining rapidly to places that are increasing rapidly, and they're right next to each other. I was pretty surprised by that.

***When you look at employment relative to population, what do you find in terms of centralization?***

**Turner:** Both employment and population are decentralizing, but population decentralizes even more. When you look at the extent to which population growth is occurring in low-density versus high-density places and the extent to which employment growth is happening in those places, you see that people seem to be willing to live in really low densities, but they don't work at those same really low densities. And that intuitively makes sense. People can have houses in the middle of nowhere but you can't run a convenience store in the middle of nowhere.

***How important has road building been to suburban and exurban growth?***

**Turner:** We know from other literature that one of the most important determinants of how cities get organized is transportation infrastructure. Basically anything you do to reduce the cost of moving around will spread people out. I don't know that we will do anything with those data for this paper. But it's clear that adding transportation infrastructure leads to population dispersion. For instance, Nate Baum-Snow's job market paper (subsequently published in the *Quarterly Journal of Economics*) looked at what happens to cities as you put radial highways in them. You can explain most of the decentralization of U.S. cities that occurred between 1950 and 1990 just with the advent of the interstate highway system.

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***Does that also explain the decentralization of industry in large measure?***

**Turner:** For the United States, I'm not sure. We did the same exercise for China, and we found that population decentralized but manufacturing employment really decentralized. As for service employment, you might imagine that would centralize. It's not clear, though.

We do know that in the United States, a lot of manufacturing used to be concentrated in cities but is no longer there. For instance, there used to be a lot of manufacturing not just in New York City but actually in the borough of Manhattan. There's very little now. To what extent is that due to transportation infrastructure and to what extent is it due to the world changing in many other ways? That's an open question, but transportation infrastructure certainly was a part.

In the United States, there seems to have been a big suburban migration beginning early in the 20th century. Around 1900, most U.S. cities were manufacturing cities. Places like Providence, Pawtucket, and Fall River were all mill towns, and people lived in big walkup apartment buildings. The thing that governed the size of those towns was how far people could walk to work. And that's all changed with the ability to move around a little easier.

***What accounts for the differences we see in the pace of development in peripheral areas across cities?***

**Turner:** A lot of it simply has to do with the overall trends in a metropolitan area. If you look at the pictures I showed for Phoenix and Detroit, they're kind of similar in a way. The growth is happening on the edges in both places. But the levels are very different — the edges of Phoenix are growing much more quickly than the edges of Detroit.

***In some ways, your paper appears to run counter to some of the stories we hear about the "back to the city" movement among both younger and older households, though maybe not middle-aged households.***

**Turner:** I'm not sure about that. What those papers say is that certain segments of the population are moving back into cities. What our data tell you is that there's a countervailing movement by everybody else, which is bigger on average. So I think both things can occur at the same time, and it's just a matter of magnitude.

***What have we not discussed about the paper, as it stands now, that you think is important?***

**Turner:** I think there are two broad classes of questions that we want to address going forward. And the first is: What are the particular histories of locations that cause them to grow or decline? For example, you would really like to know whether places where there used to be a paint factory are likely to see a lot of residential use or not. Hopefully people have some memory of locations where there used to be a paint factory or some other toxic activity and don't put their nursery schools there. We would like to check to see whether that is happening. And conversely: Are there places that are particularly prone to growth, and, if so, what things do they share? Does a place that has highly educated people continue to have them over time, or are those places that are likely to be taken over by employment, or are those places that are likely to be abandoned? So that's the first class of questions. What are the particular characteristics and particular histories that lead to more intense residential use or more intense employment use?

Once we have an understanding of that process, we will have a way of predicting what a place is going to look like tomorrow on the basis of what we know about its history. And once we do that, we can then simulate the future out 50 or 60 years and think about how likely it is that some places will go dormant and not be used forever. We will better understand how frequently that path is likely and where we should be concerned about it happening. ■

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# The Welfare Implications of Urban Gentrification

by Victor Couture, Cecile Gaubert, Jessie Handbury, and Erik Hurst

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Urban gentrification has become more common in the last two decades than the prior two decades.

It also correlates with rising house prices, rising amenity quality, and a drop in the absolute number of poor residents. Victor Couture and Cecile

Gaubert of the University of California, Berkeley, Jessie Handbury of the University of Pennsylvania, and Erik Hurst of the University of Chicago are examining the reasons for this shift, including the desirability of private amenities often found in downtown areas. Hurst discussed their paper at the conference.

***You note that gentrification has been more common in the last couple decades. Do you have thoughts on why that has been the case?***

**Hurst:** There could be multiple reasons. One mechanism we're focusing on that I think shows some evidence of what might be going on is that the downtowns of cities are relative luxury goods. What do I mean by that? As we get richer, we spend more money on restaurants, entertainment venues, and things that tend to be more easily provided in urban areas. So part of what we have been seeing over the last decade or two is incomes, particularly at the top of the distribution, have been rising. As this has happened, people at the top of the income distribution have been shifting their consumption bundle more toward these luxury goods. And since these luxury goods are more easily provided downtown than in a typical suburb, you are seeing people move to be closer to them.

***Might they also be trying to reduce some of the costs that they were willing to bear earlier in their lives, like commuting costs?***

**Hurst:** As I mentioned in my previous response, there could be multiple stories and that is one of them. As you get richer, the opportunity cost of time goes up and you want to spend less time commuting. That said, two of my co-authors on this paper, Victor Couture and Jessie Handbury, in some other work have shown that commuting times for the rich really haven't changed much over the same time period. So if it is a story of commuting costs, and it doesn't seem to be showing up in the data, part of the reason is that the rich are living downtown and are actually reverse commuting to the suburbs now. So I agree, theoretically, commuting could be an additional story. Some of the preliminary evidence says that it's maybe not quite as much of a first-order explanation as one would think.

***We often observe that the life cycle of a household is such that as they become middle class, they move to the suburbs, but then as they become relatively wealthy, they move downtown. Could you describe that process?***

**Hurst:** It's true that in the data you see a large amount of poor people living downtown and an increasing propensity of the rich to come downtown also. The middle class are much more likely to live in the suburbs. What are the factors that contribute to that distribution? People have offered explanations for this. The poor are downtown disproportionately because disproportionately there are more jobs downtown — and because the poor can't afford cars, the commuting cost is expensive for them, so they choose to locate where their jobs are. Now why does the middle class go to the suburbs? Well, the middle



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class goes to the suburbs because the suburbs offer more public amenities. The public amenities could come in a variety of ways: lower crime, better school districts, and larger lot sizes due to different zoning laws, which could be thought of as a public amenity, and people have a taste for land as they get richer. All of these type things move the middle class to the suburbs and some of the rich to the suburbs. And these are people who can afford to buy a car to commute downtown to for jobs. So that's kind of the tangential story.

The thing that our paper is adding, the third thing now, is this even more luxurious good, which are the private amenities offered by a neighborhood. And those private amenities are things like the restaurants and the entertainment options. So as I get even richer, then I want to move downtown because I consume those at a higher frequency. And that eventually causes the rich to come back downtown.

***When the rich come back downtown, there are effects on the poor who already living in those cities. Could you discuss that?***

**Hurst:** That's really the heart of our paper. As the rich move back downtown, does it impose an externality on the poor? And the answer is yes. So even if the poor get no richer or poorer — their incomes stay the same — as the rich migrate back in, they bid up land prices, making it expensive for the poor to live downtown. So then the poor have one of two options, neither of which they like. Option one is to continue living where they're living and pay a higher rent for services they don't tend to value, like fancy restaurants. Or option two is they can bear a mobility cost and move out. So they could potentially move to the suburbs or move farther away from the jobs that they have. Either way, the poor bear this cost. What this implies is that in models where you have this spatial sorting mechanism, where people can choose where to live and they have these preferences for private urban amenities as they get richer, increases in income inequality actually will be understated in the data. That is, the welfare costs

of increased income inequality will be understated relative to a world where spatial sorting responses are accounted for. In other words, income inequality in current times is actually understating the welfare losses to the poor.

Let's think about this in terms of some numbers. Suppose I'm rich and you're poor. So in the data my income has gone up from 10 to 20, and your income has stayed at 1. So it used to be a 10-1 difference between us, and now it's a 20-1 difference between us. We might think that I am now 20 times better off than you by this income metric and I used to be 10-1 better off. But that 20-1 difference is actually going to understate the utility difference between you and me during this period. As I get richer and go to 20 and you stay at 1, I'm imposing some costs on you, so your effective utility is going to be less than 1 now. You're going to have to pay these moving costs or higher rents or something that's going to make you worse off, so the gap in our well-being is actually understated relative to what it would be once I account for the fact that me moving downtown is going to make you worse off.

***How do you intend to do welfare analysis as the paper becomes more developed?***

**Hurst:** In the paper it is dependent on parameters in the model, and the key thing that is going to drive a lot of our welfare effects is how luxurious are the private amenities that are provided downtown relative to public amenities that are provided in the suburbs relative to commuting costs. So we're going to have to estimate some of those parameters directly from the data, and we're still working on the best way to estimate those parameters. Now, conditional on estimating a few of those parameters, we could use prices in quantities. What do I mean? The rents that people pay discipline other parameters in the model. But we are still way too early for me to even shed light on how we're actually going to do that in practice.

***Do you see any potential policy implications related to what you are describing?***

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**Hurst:** If I was a policymaker, there are a few things I would care about. It simply helps us understand that this is another mechanism by which inequality could have negative effects on low-income individuals. And to the extent that is entering into policy debates, this is useful in understanding where some of those differences between the high- and lower-income individuals are coming from. This manifests itself in very specific ways within cities. In many major cities, during the last decade and a half, you've seen demonstrations and protests and resistance about the gentrification that's taking place. The model that we have written down might be a lens through which to see some of that more clearly. Given that, there are some urban planning policies that we could actually evaluate in our model. Suppose you could do one of two things. I don't know if we should do either these, but you could evaluate one of two things. Suppose you could now put zoning restrictions on urban areas that prevent commercial businesses from coming downtown or developing new restaurants or urban amenities. That could limit how desirable the rich think it is to come back downtown and displace the poor. New York is thinking about zoning policies as one way to deal with gentrification. Another issue you could think about is you could place taxes on the goods that the rich buy and redistribute them back to the poor in the city to try to mitigate the problems. Those are going to have distortionary effects as well, but you could think about tax and transfer policy in this model. I don't think any of them might be the right optimal policy to do, but you could at least start to evaluate these types of policies through the lens of our model to see what their implications are.

*It seems as if there is another group of people coming back to, or in some cases staying, downtown: relatively young people who are not rich but want to live in the city. How do you think that is affecting the provision of private amenities, rents, and the other things you have described?*

**Hurst:** It's hard for me to say. Jessie and Victor have some stuff on the young. So these people are not

necessarily going to be rich now, but they potentially might be rich and might have many of the same preferences as the older people we are observing moving downtown. So that could be one potential story of why you see young people living downtown. But we don't have much to say on that dimension.

***What was the motivation for the paper?***

I've worked on gentrification in the past. So I've been thinking about issues like this for quite a while, and Victor and Jessie are separately working on urban revitalization. They have a paper very similar to what Nate Baum-Snow presented at the conference. So when I was giving a talk out at Berkeley one day, I mentioned at some point that I think there's a paper to be written on the welfare cost of urban gentrification through this mechanism I had in my mind. So we started teaming up, and we brought Cecile in because I think Cecile is among the top spatial economic geography modelers in the world. She's fantastic. The four of us have been collaborating on this pretty much over a year now trying to make progress on this issue. So the paper is coming along.

***What else about the paper would you like to discuss or do you think is important?***

I think we have covered a lot of it. The key thing is the paper is still in a really early stage. So as we spend more time working on it I'm sure we'll flesh out some additional predictions. ■

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# Rethinking Detroit

by Raymond Owens III, Esteban Rossi-Hansberg, and Pierre-Daniel G. Sarte

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The city of Detroit has struggled with population decline for decades. This exodus has resulted in a band of vacant neighborhoods in between a healthy downtown and vibrant suburbs. In a recent working paper, Raymond

Owens III and Pierre-Daniel G. Sarte of the Richmond Fed and Esteban Rossi-Hansberg of Princeton University argue that this structure is inefficient.

Businesses and residents who might otherwise move into vacant neighborhoods face a coordination problem, where no one wants to be the first to move in. Presenting at the conference, Rossi-Hansberg argued that local policymakers can alleviate this problem by providing public investment guarantees. Moreover, such guarantees need not be large to spur substantial private investment.

***We typically think of cities as developing organically. Why might the same organic forces fail to promote revitalization of abandoned neighborhoods in cities?***

**Rossi-Hansberg:** Consistent with the view that cities develop organically is the idea that they go through boom and bust cycles. As cities go through a boom cycle, everything seems to follow standard patterns of development where new empty areas get built up. However, through the declines, something seems to be failing. Something seems to be different about declines. It's natural that it's different because you have all these investments that are now not exactly what you would like to see in this area. You may be locked into some structures that are not ideal anymore. Somehow this prevents areas from giving investors the right incentives for new development.

Our work is pointing to the fact that through this decline process you can also get stuck in situations where individual incentives are not enough, where individual incentives need to be coordinated in order to improve the situation. This is an idea that we are bringing to the context of cities, but it's an idea that economics as a field has brought to all sorts of questions from banking to industrial policy to growth. The idea that individual incentives, in the presence of nonconvexities, are not sufficient for the market equilibrium to push the economy into the optimal allocation.

***You argue that there's potential for local government to play the role of coordinator through investment pledges. But you also note that it's important to choose the correct neighborhoods and the correct size of guarantee. How can local policymakers determine which neighborhoods have strong underlying fundamentals that will respond positively to these guarantees?***

**Rossi-Hansberg:** I think this is a very important question. Lots of money and resources have been wasted on policies that tried to promote particular outcomes. These policies were advanced under the presumption that there were some externalities or there were some increasing returns that justified them, but then they didn't really work. Industrial policy is kind of an obvious example of this. So I think there is an unavoidable risk here that you may try this policy and it may fail. The way to minimize that risk, maybe not eliminate the risk but minimize it, is to try to model the situation in as much detail as possible and use these models as laboratories to try these things out and see how they work before we try them in reality. So before we go and spend money, let's try these policies in these synthetic laboratories, if you will, and see whether they work.



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Of course for that to work as an exercise we want these models to be as precise as possible. We want these models to be as informed by data as possible. So that's what we're trying to do. We're trying to enrich these models with lots of data, with lots of local characteristics, with a lot of flexibility, so they can really capture the reality on the ground in a fairly detailed way and then try out the policies there. If we try the policies there, and these policies work, then I think we have a pretty good argument to advance those policies. Now, is that bulletproof? No, but it's the best we can do. What I would argue is that this is the due diligence required. The due diligence is: Let's build these models, let's try to use all our expertise to build them as precisely as possible, try out the policies, and if they work there, I think that provides the rationale to try to implement those policies in the real world.

***Is it necessary to develop unique models for any given city? Is Detroit's pattern of decline unique, or do other cities exhibit similar problems of underutilized space?***

**Rossi-Hansberg:** The problem of underutilized space is definitely very widespread in declining cities. In that sense, the basic tools and the basic methodology that we're proposing for the city of Detroit is applicable to other contexts. Now, there are some special characteristics of the city of Detroit that make the problem more salient and therefore a good experiment for this type of methodology. First of all, it has a downtown area that has a healthy number of employees and has had a healthy number of employees throughout the city's decline. So the central business district is well established as an employment center. Then you can think about the residential areas around that, or potential residential areas around that, as having a natural comparative advantage because they're close to that employment center. There are some other contexts that are more complicated because you don't have these anchors of employment at the center of the city. If you look at St. Louis, for example, what you see is the whole downtown area has declined. Of course, it could be

that the employment center just moved somewhere else. That is, you have other centers of employment, and so the residents went to wherever those centers of employment are. In those cases, there is no real rationale to try to revive the city center. So I think what is special about Detroit is that the location of the central business district is fixed and it hasn't moved. That makes some of our work a little bit easier.

***That gets back to the question about identifying the right places to intervene: You want to look at somewhere that still has an anchor? Where the center of employment still exists?***

**Rossi-Hansberg:** That's exactly right. Certain tracts have a comparative advantage when it comes to providing residential services because of their proximity to employment centers. Of course, then there are other characteristics of these neighborhoods that you also want to take into account, but that comparative advantage is certainly driving some of the effects in the model. In other areas it's a little bit more complicated. Of course, because we have these rich data about commuting and the commuting patterns across tracts for nearly all cities in the United States, you can always think about employment and how costly it is to commute to the different locations where employment is available. Sometimes you can still do the exercise, it's just that you're going to get a more complicated picture, and so it's going to be harder to illustrate exactly what's going on. But you can still do this calculation, and you can still do the counterfactual exercises that are going to tell you what neighborhoods you should choose to develop and how big these development areas should be. You can always use the model to solve that problem and get numbers for that. Making sense of exactly what is the comparative advantage that leads to those numbers is more difficult whenever the structure of the city is not as simple as the one in Detroit.

***What about impediments to development? Should policymakers consider removing barriers before providing investment guarantees?***

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**Rossi-Hansberg:** One of the points that we make in the paper is that this has been the main theory behind most of the urban policy that we've seen in these cities. There is this idea that there are some basic impediments like existing old structures or bad infrastructure or other things that are preventing development. If we could only clean up the space, then things would happen more naturally and market forces or individual incentives would generate a more consistent and efficient city.

I think there are two phenomena we've seen in reality that convince us that this is not the case. First, these neighborhoods have been in a vacant state for a very long time. Therefore, it's hard to argue that these are transitional effects that are slowly going away as existing infrastructure impediments depreciate over time. Second, there have been a lot of policies to demolish and clean up these spaces hoping that it will help development. However, we haven't seen development happen. This is an empirical falsification of these views — views that have been very dominant in urban policy. So part of our effort here is to try to change the focus. We are saying, let's focus less on removing impediments and cleaning up spaces so that they can develop and let's focus more on providing the right amount of density required for these neighborhoods to emerge — namely, coordinate these neighborhoods into better equilibria. The implied policies to do one relative to the other are very different.

***Assuming local policymakers provide these guarantees, does your model predict they will attract outside firms and residents? Or will existing firms in the area change location? And are there different welfare implications depending on which of those two is occurring?***

**Rossi-Hansberg:** Well, in the model both are happening. So you have reallocation within the city, and you have new residents coming in. In the exercises we do, even in the most aggressive exercises where we use development guarantees in all currently vacant tracts, what we find is that the number of new residents in the city is

relatively modest. So you would attract about 15,000 new residents, which is not negligible but it's also not that large. The big gains are really for businesses. They would be paying less both for land and for workers. So the way to think about this is businesses in the city of Detroit would be hiring workers who can be housed in residential neighborhoods for less because policy coordinated development of these vacant neighborhoods into a good equilibrium. So there are more residential areas, and overall residential prices in the region go down. Total residential value goes up, but the price in some of these neighborhoods close to employment centers goes down. Not in the vacant ones; in the vacant ones it goes up, but in the others it goes down. So that makes it cheaper for businesses to hire workers, which then is reflected in higher business rents. And that motivates entry by businesses, which implies that there's more economic activity in the city. We calculate this increase amounts to \$150 million per year if you were to provide guarantees to develop all neighborhoods. Again, big but not huge.

One important aspect of these gains is that they don't really happen that close to where you're developing these vacant neighborhoods. Part of the gains are for firms that are now employing people who currently live far away from the center or even outside Detroit proper. In fact, what we find is that a lot of the gains happen in areas that are pretty far from the targeted locations. So essentially these are general equilibrium effects that reduce residential rents elsewhere, which is good for businesses. It reduces the wages they have to pay as well. That's good for businesses, businesses everywhere benefit from this, and you can see that reflected in the higher business rents. So one of the results of the model is that there are many stakeholders here. It's not only these neighborhoods that are being redeveloped. They are certainly not the only ones that should be interested in doing this type of policy. Neighborhoods outside the targeted region in Detroit and outside Detroit proper would benefit a lot too. It's in their interest to help promote this and finance this policy

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because, at least according to our calculations, they are going to be some of the biggest gainers.

*So it's not just a case of reducing commuting time for workers into the central business district by allowing them to move closer, but there will also be some commuting out from the center into new business districts as well?*

**Rossi-Hansberg:** Exactly. You are housing enough people in these new areas that there's definitely going to be some commuters into the downtown area. Some of these people commute downtown, but some of them also commute out. And so that leads to benefits everywhere. Not only that, because that's substituting some of the residents somewhere else, prices of residential land in some of these other places actually also go down, which makes it easier or cheaper to live in the area, which implies that you don't have to pay the workers as much, which reduces some of the wages, which then in turn benefits businesses that are relatively far away. This mechanism is fairly strong. If you think about the \$150 million in business rents I was talking about, you should think about a breakdown of one-third versus two-thirds. One-third happens in Detroit proper, two-thirds actually happens outside, which is fairly large. Of course some of the big employers are outside Detroit proper, like some of the car companies in Dearborn, etc., and they would benefit from all of this.

*Some of the literature on the durability of housing suggests that if you have a bunch of vacant housing, it acts as a drag on housing prices, and one way you might fix that is by demolishing that housing. But as you've said, it seems like that didn't work in Detroit, and the answer is actually to try and coordinate building more housing.*

**Rossi-Hansberg:** That's right. It just didn't seem to be working. That doesn't mean that in other contexts and other circumstances, those policies wouldn't work better. But I think in general a key idea is the fact that people don't want to be in a neighborhood on their own. Density is important. Density brings in all sorts of positive amenities, including schools, less crime, and certain goods and services that people enjoy. These types of externalities and agglomeration forces that come through amenities are very important. We're getting more and more evidence that they are. They are really the central aspect of these cities, and maybe the literature in the past has put relatively too much emphasis on production-type externalities and too little emphasis on these types of amenity externalities. These amenity externalities determine the future of cities, as well as how cities grow and decline. ■



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# On the Dynamics of Segregation

by Iain Bamford and Donald R. Davis

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Do city neighborhoods sort by race, and does the composition of those neighborhoods change over time? Donald Davis and Iain Bamford of Columbia University explore these questions in preliminary work that looks at New York and

other major U.S. cities. They find that households tend to cluster in neighborhoods with the same modal race, but the composition of these clusters changes over time. This discovery enriches standard “tipping” models used to describe the role race plays in influencing where individuals choose to live in a city. Davis presented their findings at the conference.

***How have economists traditionally modeled the role that race plays in determining where households locate in a city? Has that matched up with what we actually observe?***

**Davis:** Economists have actually found it pretty hard to model how races interact in a city. There is one big traditional model, and it’s a model of so-called racial tipping. And what’s really instructive about these models of racial tipping is that they tell you that by what you observe in the city, you can’t necessarily infer the motives of individuals for locating where they do. Thomas Schelling has a paper where he talks about micro motives and macro behavior. But the thing that is in some sense very illuminating about that is that even if people only have relatively weak racial preferences about where they live, you could still end up with a very highly segregated society. The model also tends to have fairly extreme predictions that if a neighborhood crosses over a racial composition threshold, then it is going to go

to 100 percent minority population. And certainly there are areas in cities that have changed their composition in the last four decades. In New York City, the percentage of the white population has gone down by 30 percentage points. But what you find is that it’s a more subtle process than the model would suggest, and the most extreme segregation is less present than it used to be. There are neighborhoods with mixes of different groups. So I think the models that predict only extreme outcomes don’t do very well by those measures.

***Despite that, you still found that when you looked at the modal race in neighborhoods, there were clusters of neighborhoods with a similar racial makeup.***

**Davis:** Yeah, so clustering is very big. The main measures that economists use to determine the degree of segregation or integration treat the individual census tracts, which in a place like New York City are just a few neighborhood blocks, as though each one existed on its own. So a city could appear vastly more integrated than it actually is if you don’t change the standard measure of segregation, which is the dissimilarity index. The reason is that is measured only at the census tract level, and where census tracts are relative to each other is something that’s actually not measured. So if you looked at New York City, the fact that almost all of the black modal groups by borough will be clustered together is completely ignored by the dissimilarity index. You find a large black belt in Brooklyn, which started out in Bedford-Stuyvesant and has been moving slowly outward away from the center of the city. There’s another one that’s centered in Jamaica, Queens, there are parts of the North Bronx where that’s true, and a shrinking set of places in Manhattan, mainly clustered around Central Harlem. I will just say, on a personal basis,

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when I first moved to New York City, I thought I lived in this very integrated city, because living in a central area, a lot of people come there for work. I would ride on the subway, walk on the streets, and see this very integrated city. But when everyone goes home, they're going to very different neighborhoods. And so for me, the first time I started looking at these data I was actually pretty shocked at how segregated the city that I was living in was.

***And that's a pattern that you've found in most American cities?***

**Davis:** Yes, in a lot of U.S. cities. Now one of the interesting things if you think about segregation and clustering is you can have clustering of like types together for two reasons. One is going to be a bad reason, which is that people are not allowed to move into the other areas. And if you look historically in the United States, that is the origin of a tremendous amount of black/white segregation. If you go back to 1950 in New York City, just as an example, you can move across one census tract and the black population percentage will drop from 85 percent or 95 percent to 2 percent by simply crossing the street. The role of the official or unofficial barriers was very extreme. We got rid of the legal foundations of that segregation nearly half a century ago, so at least laws are really not playing that role. Yet it persists. So you can ask, what are the barriers to integration? Are people unable to go to the places that they would like to live?

A separate thing, and you can see it certainly in New York City, is that there's also something pulling similar races together. If you go to, say, Manhattan's Chinatown or Flushing, Queens, or Sunset Park in Brooklyn, there are thriving neighborhoods that include a lot of immigrants and the kinds of stores that they want are very specialized. So that tends to be a positive thing pulling them together. In fact, one of the really interesting and fun things about living in New York is that there are these distinct neighborhoods. So it's very hard to separate how much of the existing segregation that we observe is due to these things we would like to undo, namely

the sense that people are excluded from an area, versus the things that are on some level perfectly fine, namely that people are drawn to be with each other because they share a common culture, interests, and consumer tastes.

***One of the key insights that came out of your study is that the neighborhoods in these clusters can behave differently depending on whether they are in the core of the cluster versus at the edges.***

**Davis:** This is research in progress so that's something that we want to investigate further. One of the things that is true is that the transitions from one group being the modal group within a cluster to another group being the modal group within the cluster almost never happens inside or at the center of the cluster. It almost always happens at the edge. And so it's interesting to think about what is the mode. Apart from racial things, there is a lot of competition for location in the city. Location matters because there are local amenities, local disamenities, access to jobs, and there are lots of reasons why people care where they live in the city. And insofar as there's also competition at the edge of racial clusters about which will be the dominant group there, it would be nice to understand the nature of that attraction better than we do now.

***Could it also be useful as a framework for understanding the process of gentrification?***

**Davis:** One of the things about gentrification is that on its face, sort of by definition, gentrification is about rising incomes within a neighborhood and concerns about the displacement that comes from that. In America, race is this deep historical question that's been looming over the country since before it was a country, and so that's something that you can't get rid of. So while on its face gentrification is about social class, in practice, the way that people are making observations about it, it's also about racial transitions. The way I think about it is, suppose that you took a low-income black neighborhood where there were black middle-class or black upper-class

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households moving back into the neighborhood. How would you view that? Would you think that's a good thing or a bad thing?

William Julius Wilson had a theory about what had happened in America's inner cities, which is that when you introduced the fair housing laws, it got rid of legal segregation, and the black middle class and upper class moved out of the areas that low-income blacks were living in. And he saw this as something that gave rise to what he labeled the truly disadvantaged. Those who got left behind in these black inner city neighborhoods don't have role models of people who are successful doctors and lawyers and don't see people necessarily getting up in the morning and going to work. The elements of social stability provided by the middle class get knocked out of there because they're leaving these areas. So you could think it's a bad thing for the black middle class and upper class to be leaving the traditional black neighborhoods. But if they lived there previously partly because they couldn't leave, then it's a good thing that they can now go where they want to go. You might then think that if they moved back, that would be a good thing. But that would be gentrification, if you didn't think that gentrification was also about race.

If you look at places such as Central Harlem, gentrification actually did happen in the 1990s, but at the outset it was the black middle class moving back into the neighborhood, and I don't think that engendered a lot of antipathy. After 2000, it started to be larger numbers of whites moving into the area, which are now say 12 percent of the population. And again, the question is how you want to look at that. It's not clear that gentrification is only defined by a social class because when the black middle class was moving back in, that wasn't considered a terrible thing. But when white students and artists and so on started moving in, that was considered a more controversial thing.

***So if gentrification has a racial component, then can you think of it in the context of tipping models? You use the phrase "untipping," where you have neighborhoods that tip toward a minority mode and***

***then tip back toward majority white. Is that similar to gentrification?***

**Davis:** Well, not necessarily. I think that it's going to play itself out in different ways. Let me just add a couple of things. One of the biggest things happening in American cities over the last 25 years is the decline in crime. If you look over long stretches at a time, there was a fairly steady level of crime in American cities in proportional rates from 1900 to 1965. In the late 1960s and early 1970s, there was a very large rise in crime. It stayed around that level until the early 1990s, but since then it has plummeted. New York is a little bit of an outlier, but most major categories of crime — murder, robbery, burglary, and on down the list — are all down about 85 percent. And there's almost nothing in social sciences of importance that changes by 85 percent over a relatively short period of time. Absolutely no one predicted this.

One of the things that happens is that when crime is high, people separate, because they don't trust that they're going to be safe in the neighborhood of the other. And I think that's very natural in a sense. Now, to a large extent, we've gotten rid of the high levels of crime that we had for many decades, with some exceptions. So I think that in some sense it's very natural for people to be more willing to move into neighborhoods where they are not the majority. One view of what racial integration would be is blacks moving into white neighborhoods. And that has happened to a certain extent. But the flip side of whites moving into black neighborhoods is also integration. And if you think that integration is a good thing, then you shouldn't necessarily think this is the most worrisome thing in the world.

***So you're saying that it may be that the racial sorting we've observed in the early 20th century was likely legally driven, while in the middle decades there might have been some other underlying causes like crime?***

**Davis:** I think the legal framework is one aspect of it. But there was also violence in the earlier decades



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aimed at keeping neighborhoods segregated. That was very one-sided once upon a time. Simply, the law stood behind the white community. So when I was talking about in 1950 there being areas where just by crossing a street you would go from 85 percent or 95 percent black to 2 percent black, in New York City that wasn't due to a legal restriction, it was just known that you don't cross that street. That started to break down even before the legal changes.

So, yes, early on, it was legal and some effectively extra-legal things. Later on, I think that it was people didn't feel safe in the neighborhood of the other, and actually, as it turns out, there were reasons not to feel safe. Crime was very high. That's disappeared now. And in some sense, there's a natural degree of integration that is happening now that people are viewing as gentrification. So if a student who isn't making a lot of money but is white moves into a black neighborhood, is that gentrification? You really need to stop and look more closely at how you're thinking about these things, because it's easy to fall into habits of mind that tell you that any white coming into a black neighborhood is displacing blacks. Just as an example, Central Harlem has been losing black population every decade since the 1950s. So the fact that the black population in Central Harlem continued to decline in the 2000s isn't in and of itself evidence of displacement.

***Do you think researchers are changing how they think about the role that race plays in neighborhood composition?***

**Davis:** I don't know whether it's changing. There's a lot of conflict out there. I think you have to ask, what kind of world do you want to live in? I think that the

kind of world that we want to live in is one in which anyone can feel free to live where they want. What that would mean is that there are neither legal nor extra-legal pressures that are forcing people to live in one neighborhood rather than in another. But I think that's symmetric. I think that blacks and Hispanics and Asians should go where they most want to be, and neighbors should welcome them and treat them as anyone else. And I think that same thing goes for whites. Cities are supposed to be a place where we can all live together, and I think that we're much closer to that than we were 25 years ago, let alone half a century ago.

There are a lot of issues that need to get sorted out along the way to, hopefully, a place that's more welcoming for everybody. I don't necessarily think that means we will end up with perfect integration as the final outcome. I think that cultural preferences will lead some people to still live together with like groups. If you're Asian and you like Asian foods, you might want to live in a neighborhood with a high density of Asian restaurants and markets and so on. And similarly for other groups. Some people are willing to pay really high amounts to be near the best pizza place or the best cappuccino place or locally sourced ice cream, and so on. And I think that's just as valid as the other things that draw like types together. ■

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# Immigrant Locations and Native Residential Preferences: Emerging Ghettos or New Communities?

by Jesús Fernández-Huertas Moraga, Ada Ferrer-i-Carbonell, and Albert Saiz

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From 1998 to 2008, immigration to Spain caused the country's population to grow by 10 percent, a phenomenon that was not widely expected by the native population. Jesús Fernández-Huertas Moraga of

the Universidad Carlos III de Madrid, Ada Ferrer-i-Carbonell of the Institut d'Anàlisi Econòmica at the Barcelona Graduate School of Economics, and Albert Saiz of the Massachusetts Institute of Technology are examining whether that immigrant inflow led to natives fleeing established neighborhoods where newcomers settled and the level of integration in new residential developments. Saiz discussed their paper at the conference.

***Could you discuss tipping-point behavior in relation to neighborhood transitions?***

**Saiz:** Due to the legacy of slavery, in the United States we had historically seen low levels of tolerance for racial integration. And that generates this phenomenon of tipping points, which occurs when a neighborhood becomes sufficiently populated by a minority population that you have white flight from those neighborhoods. It's a complicated phenomenon. There's now a reversal in some areas with gentrification and you see some mixing in some neighborhoods, which may be transitional, where whites are coming back to these central neighborhoods. It might be because we're becoming more tolerant, or it might be because there's an expectation that these neighborhoods are going to gentrify, so people might be willing to entertain

racial diversity insofar as they know it's going to be relatively short lived.

One of the important issues here is that the people who start gentrifying a neighborhood are not necessarily the people who end up living there when it becomes a high-income neighborhood. So you have people who are much more tolerant and move in, but then as prices go up, the minorities have to leave and then other whites move in. So there's a period of transitional mixing, but it's not because everyone is very tolerant necessarily; you just need to have a segment of the population that is more tolerant to begin the transition. That's what we have today. If you ask me, does the white population have to get to 20 percent or 40 percent to see a neighborhood tip to becoming mostly white, I don't know the answer to that. But it's very clear that you have an important and growing segment of the white population that is more tolerant that's doing the initial gentrification. On the other hand, we do see in the United States increased segregation by Hispanics. So while gentrification is an issue in central cities, in a lot of suburbs of our country Hispanics are moving in and whites are fleeing, especially when a large number of Hispanics enter that area's school districts.

***Do you think there are other factors that may cause whites to flee suburbs into which Hispanics are moving in large numbers?***

**Saiz:** I think it's mostly schools. But you're right, it's not all of it. There's a lot of research on immigrant arrivals and native mobility. I think there are two very important elements. One is schools. The other is pure socioeconomic status. I'm not sure you can call it necessarily racism, but it's certainly about socioeconomic status. People with higher

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socioeconomic status enjoy the company of people who are like them, for many reasons. At a barbecue party, for instance, it's harder for socialization to happen across different socioeconomic positions. Language barriers play a role too, but I don't think they're that important. Schools and socioeconomic status are the really important ones.

When Hispanics move into an area, there's certainly trepidation from non-Hispanic white families that the school quality will go down. It's an interesting question whether the school quality really will go down just because kids who are of lower socioeconomic status are moving in and are expected to perform worse than the kids already there. The issue is whether that will affect children of higher socioeconomic status. It's not clear, but people still tend to believe that there's a spillover in educational attainment from low socioeconomic status kids to higher socioeconomic status kids. If there is, then there's a fundamental problem, but if there is not, it's all based on perception. If a Hispanic kid is in the same class with a non-Hispanic white kid and the Hispanic kid is doing poorly and the white kid is doing fine, in theory the white kid's parents shouldn't care. There are plausible theories supporting the presence of spillovers. For instance, there are fears about language support that these kids need that might draw away some resources from other students and change the teacher's focus. But the evidence is inconclusive. Even if there are no Hispanics in a class, is the fact that this year's class has 10 kids who are underperforming in your child's class going to affect your child? That's not even clear. But, of course, parents are very risk-averse, so we have to be compassionate with and understanding of these choices even if at the aggregate level they create this segregation problem. It's a very difficult issue.

***Did you find evidence for tipping-point behavior in the case of Spain during the period of high immigration from 1998 to 2008?***

**Saiz:** We don't find any. That's kind of in contrast to what we have found in the United States. What

happened in Spain is that there was a 10 percent population change in only eight to 10 years. It was so large and happened so quickly that it would have been very difficult for a native to really predict where people were going to settle. So in a way that made it more difficult for people to know whether it pays off now to move to another neighborhood even if your neighborhood becomes more heavily populated by immigrants, because everything is in flux. So I think that's why the scale, magnitude, and speed of this phenomenon actually in a way had a benign effect. In the United States, the boundaries are generally well defined, so if you see the boundary moving a little bit in your direction, then you know that change is going to happen. But in Spain you saw a mix of people moving in all directions, and it was very difficult for people to form expectations, so they stayed put.

The other interesting element is that there was even more racial mixing in new suburban neighborhoods. I think that's also true in the United States. I haven't examined closely why this is the case, but I think we need to. A lot of the research using tipping methodologies is really focused on neighborhoods that already exist and how they change. But I would like to look more at what happens in new residential real estate developments. My sense is that it's similar to what we saw in Spain: It's difficult for people to form expectations about who is going to be there and who's not going to be there. So you're almost forced to move without having an expectation about what's going to happen. That might make for a more mixed community, whereas if you move to a central neighborhood and you know what the history has been there, that's unlikely to ever be very mixed.

***How were the more liberal immigration policies that led to significant inflows generally received by the native population in Spain?***

**Saiz:** Very negatively. That's why we were so surprised with the findings, because we did expect to see substantial segregation. Many people, anecdotally at least, felt like, "Oh, they're coming

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and we need to push back.” On the other hand, the economy was growing, so that tended to mitigate the concern. In general, when the economy is doing well, people may be uneasy with immigration, but they don’t necessarily take action in a political sense.

That changes when the economy is doing poorly. During the deep recession of 2008 to 2010, popular sentiment against immigration in Spain grew considerably, even though there were a lot of immigrants who had arrived and simply left when the economy turned. I think that everywhere where you look at the data, there’s a clear correlation between economic decline and anti-immigrant sentiment. I think we have seen this in the United States too — for instance, in the Upper Midwest where a lot of industrial jobs have been lost, it seems that people have become more opposed to immigration. You see the same in France in formerly robust industrial cities that have been in decline.

***What do you think the Spanish experience might suggest for American cities?***

**Saiz:** This gets back to something I discussed earlier. We saw a lot of new residential developments in Spain, particularly in the suburbs, and the level of ethnic mixing there was quite large. So it’s not only that there was displacement, there was actually complementarity. I think that we have to start thinking less exclusively about existing enclaves and talk more about new thriving areas and the factors that drive both minorities and whites to move into these new suburban and exurban developments. If you are interested in less segregation, completely focusing on trying to get an income and racial mix in existing enclaves is problematic, because you could see gentrification that could price out many people and lead to a pretty homogenous population. So I think, culturally, it’s important to think about the factors that permit people of different colors to feel comfortable living next to each other — but such a culture may have to be created ex novo in new developments. It’s just really hard to change people’s opinions in long-standing neighborhoods because the culture in those areas is firmly embedded and

hard to change. Those are the types of places that whites tend to flee from when nonwhites move in for some of the reasons I mentioned earlier, such as the belief that school quality is almost automatically going to decline.

***Where do you see your research going from here on this paper?***

**Saiz:** Well, on this paper, I think we would like to do a bit more structural work on trying to look at what happens to housing prices when there are large immigrant arrivals to an area. But I think more generally there is a lot to be done in terms of studying the interrelationship between immigrants and preferences among natives in the United States and elsewhere. I think that the effects of immigration on wages and jobs are important and do drive some people’s views and can cause them to argue and vote for different policies. But I think it’s really the social interactions that happen within half a mile or so that drive how people think about immigration and whether, for instance, they decide to move. We need to better understand those interactions and what makes some of them uncomfortable for people.

***That seems hard to do.***

**Saiz:** Yes, part of it involves behavioral research that is often done by other social scientists, but economists can add a lot because we’re good at thinking about how to measure things. For instance, you could probably learn a lot by looking at neighborhood structure — street layouts — and what level of proximity to Hispanic neighbors drives which type of behaviors. Or maybe you look at English proficiency among Hispanics in various neighborhoods and how that affects people’s interactions.

We can look at the choices people make about where to live, where to shop, where to work, and correlate those to different characteristics of the native and immigrant populations to see whether the outcomes are different when the fundamentals are different. ■



