Cityscape

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RENTAL HOUSING POLICY IN THE UNITED STATES
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Guest Editors' Introduction

Vicki Been
New York University School of Law; Furman Center for Real Estate and Urban Policy

Ingrid Gould Ellen
New York University Wagner Graduate School of Public Service; Furman Center for Real Estate and Urban Policy

Americans have long been in love with homeownership. Even Alexis de Tocqueville endorsed this preoccupation, arguing that homeowners would be more responsible citizens and predicted that nations with more homeowners would be more politically stable and have fewer revolutions. More recently, others have argued that homeownership makes people take better care of both their homes and their children and helps households to build wealth. The corollary of this fixation on homeownership is that researchers have paid far less attention to rental housing, and federal policymakers outside the halls of the U.S. Department of Housing and Urban Development largely ignore it. The unifying theme of the articles in this issue of *Cityscape* is that rental housing deserves more attention.

The genesis of this volume was a project of the What Works Collaborative (WWC), a foundation-supported research partnership that conducts timely research and analysis to help inform the implementation of an evidence-based housing and urban policy agenda. To stimulate more discussion about the role that rental housing should be playing in the post-crisis housing environment, the WWC commissioned six leading housing economists to draft articles about rental housing and then participate in a discussion about rental housing policy with Obama Administration officials. The articles provoked a great deal of debate in those discussions, and we hope that bringing them together in this volume will advance the debate further. To supplement the original six articles, we invited Robert Collinson to write an article on current conditions in the rental housing market and Hugo Priemus to offer an international perspective on rental housing policy.

We certainly cannot do justice to the nuances of the individual articles in this brief introduction. We encourage you to read all the articles, because each offers much for the reader to learn. The articles collectively offer several reasons why rental housing is important and why a robust rental housing market is vital to the U.S. economy. First, as many of the articles point out, rental units house a very large share of the population. About one-third of all U.S. households live in rental housing. Second, several articles make the point that rental housing allows greater mobility to respond to job opportunities, household composition changes, and the like. Third, the authors emphasize that, for most households, owning a home is a significant investment

and requires substantial fixed cost, and rental housing thus may allow households to better diversify their investments. Fourth, given the connection between ownership and structure type, Edward Glaeser, in "Rethinking the Federal Bias Toward Homeownership," underscores that rental housing is simply greener, or more environmentally sustainable. Finally, several of the authors maintain that the current market downturn and foreclosure crisis deliver a serious challenge to some key arguments that have traditionally been made to justify support for homeownership. Buying a home in the United States in 2005 surely was not a path to building wealth.

In addition to making the case for the importance of a vibrant rental housing market, the authors explore the appropriate role of the federal government in ensuring a healthy rental market. The authors point to potential externalities in arguing that it might be efficient for government to support rental housing, especially for lower income households. In addition, several authors also suggest that the enormous subsidies that the U.S. government provides to homeowners (most notably through the mortgage interest deduction but also through local zoning and the favored treatment of capital gains) may justify government support of rental housing simply to level the playing field.

Of course, the authors' agreement that government intervention in rental markets can be justified does not mean they embrace all current federal rental programs. The articles offer some provocative suggestions for policy reform and experimentation. Several authors argue that the mortgage tax deduction should be modified, if not abolished, given that it is hugely expensive, highly regressive, and poorly targeted. Glaeser proposes that the federal government offer funding, analogous to the Department of Education's Race to the Top, to encourage localities to change their land use regulations in ways that could open the door for substantial increases in the supply of multifamily rental units.

A few of the articles also offer suggestions for helping to reduce the risks of renting. Denise DiPasquale, in "Rental Housing: Current Market Conditions and the Role of Federal Policy," and Todd Sinai, in "Understanding and Mitigating Rental Risk," each make a case for experimenting with longer leases. In commercial real estate, longer leases are common; in residential markets, they are rare. Fewer than 2 percent of residential leases are for longer than 1 year, although longer leases would arguably bring some certainty to the cost of renting. Brendan O'Flaherty, in "Rental Housing Assistance for the 21st Century," suggests an innovative idea that might help facilitate longer leases—government-provided rental insurance—to help households protect against the risk of job losses, serious health crises, or other individual, nonhousing risks. Finally, Sinai proposes an options market that would allow households to hedge against future rent increases.

Some of the articles also offer specific suggestions about multifamily rental housing financing, and DiPasquale's article underscores the important role that government-sponsored enterprises (GSEs) have played in providing multifamily housing finance. She urges that any GSE reform pay close attention to the implications for financing multifamily housing, especially the small multifamily buildings with 5 to 50 units, which are poorly served by today's credit markets.

Finally, the articles offer a number of suggestions for improving the delivery of low-income housing assistance. Virtually all the articles argue for a strong preference for voucher programs

versus unit-based assistance (although a few authors believe that place-based housing investments may be justified in some circumstances to promote neighborhood revitalization). Both O'Flaherty and John Quigley ("Rental Housing Assistance?") also suggest moving to an entitlement rental program.

In the first article in this issue, Glaeser argues that policies that encourage homeownership also foster low-density living, because a strong link exists between rental housing and multifamily structures. Given the environmental and social benefits of population density, he argues for reducing the biases in federal and local policies that favor homeownership.

Richard Green, in "Thoughts on Rental Housing and Rental Housing Assistance," similarly highlights the bias of the nation's current policies that favor homeownership. He suggests that federal rental housing subsidies may be justified to level the playing field, but he contends that subsidies should be delivered through tenant-based vouchers.

The next two articles in the issue focus on current conditions and trends in the rental housing market. DiPasquale highlights the financial vulnerability of the multifamily housing stock. She reports that rental vacancy rates are at historic highs, although rents and renters' incomes are falling. As policymakers reconstruct the U.S. housing finance system, she makes a strong case that consideration must be given to rental housing providers' credit needs, especially as an increasing share of households are renting.

Collinson, in "Rental Housing Affordability Dynamics, 1990–2009," focuses on the experience of renter households. He reports that, although rent burdens fell slightly during the 1990s, the combination of stagnant incomes and rising real rents pushed rent burdens to historic highs between 2000 and 2009. But he highlights the tremendous variation across metropolitan areas in affordability, which is likely to continue. Finally, he points to several gaps and shortcomings in existing data sets and calls for more detailed, timely, nationally representative data on actual rents paid.

The next two articles emphasize that rental housing policies should pay attention to both risks and costs. Sinai contends that, although the recent housing crash is a reminder that homeownership is risky, renting housing also has risks. Indeed, he maintains that neither tenure mode is more or less risky than the other in any absolute sense. But given that renters tend to spend less on housing, they may be better able to handle volatility. He also suggests some policies that might minimize the risks that renters face, such as encouraging longer term leases.

O'Flaherty focuses on two important roles government can play in the rental market: (1) providing a safety net for renters against risks of job loss, illness, or changes in relationships that may make it impossible for them to pay their rent for some period; and (2) generating external benefits from the provision of housing in good neighborhoods. He explains why the private market generally does not offer rental insurance and proposes that the government step in. He also argues that government should revamp housing assistance programs to make the federal subsidy depend on whether the housing is located in neighborhoods that provide decent environmental quality, good schools, convenient job access, and other opportunities.

Like O'Flaherty, Quigley focuses on low-income housing assistance. He discusses the rationale for renter assistance programs and then recommends a universal housing entitlement program, targeted to a narrower band of low-income households and administered through the tax system. He suggests that reducing the limits on the deductibility of interest payments for high-income homeowners could finance the program. He reasons that the government should subsidize the construction of housing developments only when the community spillovers are deemed large enough to justify those investments.

Finally, the international discussant, Priemus ("Renting in the USA: A Dutch Perspective"), offers a useful perspective on U.S. policy and reminds us that other housing assistance models might be examined and adopted. Priemus highlights some areas of similarity, calling for reforms to policies in the Netherlands, which are very similar to those recommended by the authors in this volume for the U.S. system (such as eliminating the mortgage interest deduction and adopting universal housing vouchers), but he also points to substantial areas of difference.

The need to learn from and avoid repeating the recent housing crisis provides an opportunity to rethink the role that rental housing should play in meeting the needs of the huge variety of American households during the different stages of their lives. We hope that the creative and thoughtful articles in this volume will provoke and enrich that conversation.

Rethinking the Federal Bias Toward Homeownership

Edward L. Glaeser
Harvard University and the National Bureau of Economic Research

Abstract

The most fundamental fact about rental housing in the United States is that rental units are overwhelmingly in multifamily structures. This fact surely reflects the agency problems associated with renting single-family dwellings, and it should influence all discussions of rental housing policy. Policies that encourage homeowning are implicitly encouraging people to move away from higher density living; policies that discourage renting are implicitly discouraging multifamily buildings. Two major distortions shape the rental housing market, both of which are created by the public sector. Federal pro-homeownership policies, such as the home mortgage interest deduction, weaken the rental market and the cities where rental markets thrive. Local policies that discourage tall buildings likewise ensure that Americans have fewer rental options. The economic vitality of cities and the environmental consequences of large suburban homes with long commutes both support arguments for reducing these distortions.

Introduction

More than 85 percent of single-family dwellings are owner occupied; more than 85 percent of dwellings in homes with more than three units are rented. When the federal government subsidizes homeownership explicitly, through the home mortgage interest deduction, and implicitly, through the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac, it is pushing Americans away from dense multiunit dwellings toward sprawling single-family detached homes. Local zoning rules that prohibit high-density and multiunit dwellings contribute to the governmental bias against compact development. Does it really make sense to stack the deck against energy-efficient, economically vibrant urban density?

Federal pro-homeownership interventions have long had three common justifications: (1) homeownership provides a path toward individual prosperity, (2) alleged market failures in the mortgage market require market-making federal action, and (3) homeownership establishes a connection with good citizenship. The great housing convulsion of the past decade challenges the first justification

by reminding us that prices go down as well as up and that subsidized borrowing can lead to a "foreclosure" rather than an "ownership" society. Moreover, even if the secondary mortgage market needs public organizers to solve information-related market failures (a highly debatable proposition), those public organizers do not need to subsidize home borrowing as the GSEs have done. As the public is now beginning to see the bill for the GSEs' largesse, the national appetite for further subsidy of this nature seems to have diminished substantially.

Thus, the post-crash case for subsidizing ownership comes down to the connection between homeowners and citizenship. One can reasonably debate whether the correlations between ownership and citizenship-related variables such as voting in local elections are causal or large or valuable enough to subsidize (DiPasquale and Glaeser, 1999).[1] One can even question whether subsidies that scale up with the size of a mortgage are either well designed or fair. In this article, however, I focus on a different reason to rethink federal housing policy and shift the focus from owning toward renting: ownership is tightly tied to structure type, and it is a mistake to subsidize people to live in large single-family houses instead of dense apartments.

Economists have often emphasized that the mortgage deduction would be nondistortionary if we effectively taxed the implicit housing services provided to themselves by homeowners. This argument is correct, and would have some weight if a tax on implicit housing services were politically plausible in the United States. But, in the absence of that tax, the mortgage deduction makes investing in homes far more attractive than investing in other, often more productive investments that yield financial returns (which are taxed) rather than housing services (which are not).

The connection between structure type and ownership is strong and understandable. In the Evidence on Homeownership, Structure, and Policies section of this article, I explore the simple logic of property rights and investment (for example, Grossman and Hart, 1986; Klein, Crawford, and Alchian, 1978). In general, ownership should be lodged with the agent who is in the best position to make investments and, in the case of a single-family detached house, that agent is the resident. In a multifamily dwelling, occupants share infrastructure and often lack any comparative advantage in investing in a roof or a boiler. Moreover, multiple owners make coordination costly, so renting, rather than owning, comes naturally to residents in bigger structures.

The implication of this connection between structure type and ownership is that subsidizing ownership is inherently subsidizing single-family detached dwellings, which means that these policies are implicitly encouraging moving away from high-density living. Because the home mortgage interest deduction subsidy scales up with the size of the mortgage, it also functions as a subsidy for larger homes, and, under some conditions, larger lots as well. It would be problematic to distort decisions about density and home size if, in the absence of interest rate subsidies, the free market was making socially optimal decisions.

Even without the subsidy, however, there would be too little density relative to the social optimum. Private decisionmakers ignore the pollution- and congestion-related externalities that are

[1] Green and White (1997) presented evidence suggesting that homeownership improves children's outcomes, which may present a more serious case for subsidizing homeownership. The correlation of omitted parental characteristics with homeownership, however, makes this connection difficult to tease out. Coulson and Li (2010) is an important paper that estimated homeownership spillovers.

associated with larger homes away from the urban core. Larger homes use more energy and single-family detached homes, which are typically larger, use more energy than rental units.[2] Local governments have consistently enacted rules that prevent dense development. From this perspective, federal pro-homeownership policies are distortions on top of other distortions and this fact implies that the social costs of these policies are likely to be even larger.

Although the positive externalities that could come from citizenship may suggest a case for subsidizing homeownership, the offsetting negative externalities will exist as long as the world fails to charge the social cost of carbon emissions and traffic congestion. Subsidizing homeownership is not just about subsidizing an asset class; it is also about subsidizing single-unit living, which tends to be away from the urban core. Encouraging people to flee cities to live in low-density homes hardly seems sensible. Although improving federal rental policy is certainly possible, perhaps by improving the portability of vouchers, the biggest way that the federal government affects the rental market is through its subsidy of homeownership, and it is surely time to rethink the size and extent of that subsidy.

Reducing the pro-homeownership bias would increase the demand for rental housing, and an unfortunate side effect of this increased demand might be that rental costs could increase. One way to mitigate a rental cost increase would be to reduce the barriers to multiunit building that exist in much of the United States. Although these barriers are enacted at the local level, they affect the nature of America's built environment and even the distribution of population across the United States as a whole. In many metropolitan areas, suburban enclaves have made it extremely difficult to build the kind of dense developments that would typically be rented. For example, a large share of suburban Boston is completely off limits to multifamily dwellings (Glaeser, Schuetz, and Ward, 2006). In cities, significant barriers to building have also existed, including in large historic preservation districts. These barriers make housing more expensive, and, when they prevent large multiunit structures, they limit America's stock of rental housing.

In the penultimate section of this article, I discuss these barriers and what can potentially be done to encourage localities to internalize the social costs of barriers to building up. Because the federal government cannot directly control local land use rules, the most practical approach would be to create financial incentives for more permissive construction of multifamily units. One approach would be to use funds taken from either a decreased home mortgage interest deduction or from the problematic low-income housing tax credit (LIHTC) to sponsor a density fund, based loosely on the U.S. Department of Education's "Race to the Top" fund, that would reward a few localities with unrestricted aid in exchange for their meaningfully reforming local land use controls in a way that creates more high-density rental units.

In the next five sections, I (1) revisit three nonstructure-related reasons to question the home mortgage interest deduction; (2) focus on the link between ownership and structure type; (3) present facts about ownership, structure type, and energy usage; (4) provide a brief discussion of land-use-related issues; and (5) conclude with a modest policy proposal that involves reforming the home mortgage interest deduction and creating a fund to prod localities toward constructing high-density, presumably rental, dwellings.

[2] http://www.eia.doe.gov/emeu/recs/recs2005/c&e/spaceheating/pdf/allTables1-13.pdf.

Three Nonstructure-Related Reasons To Rethink the Mortgage Deduction

Before addressing the connection between ownership and structure type, I will first restate the three primary objections to the home mortgage interest deduction in its current form.[3] (1) Although support for homeownership is often billed as providing a path toward wealth accumulation, the deduction is just as likely to encourage excessive risk-taking; (2) as Poterba and Sinai (2008) documented, the deduction is extremely regressive; and (3) the deduction distorts the purchase decision and encourages excessively large housing units.

Does the Interest Deduction Lead to Wealth Accumulation?

One core rationale often given for subsidizing ownership is that homeownership can be a path toward asset accumulation. Although one can ask why homes, of all forms of assets, should be so privileged, it is reasonable to revisit the question of whether the home mortgage interest deduction increases asset accumulation at all.

I start by assuming that the government has some interest in promoting wealth accumulation, perhaps because wealthier individuals are less likely to burden people around them or because the tax code reduces other forms of investment by taxing capital gains and dividends. If this is the primary motivation for encouraging asset accumulation, then it seems likely that the social value function is quite concave in private wealth because the goal is primarily avoiding extreme hardship. This challenges any strategy that leads toward excessive private risk-taking, such as encouraging people to borrow money with which to bet on a risky asset such as housing.

The best case for homeownership as asset accumulation is that (1) the individual saves more ex ante to get a down payment; (2) the person then buys a home, and the value of the home increases as home prices rise; and (3) the homeowner then pays down his or her mortgage. If all three events occur in this fashion, then homeownership will increase asset accumulation. Certainly, homes have typically been the largest asset for many American households.

Yet some of these events might not occur and might even be reversed because of home mortgage policies. The volatility of the housing market over the past 4 years has clearly illustrated that housing prices go down as well as up. In general, the Americans who bought houses during the boom have lost money and are now in far worse financial shape than if they had not bought. The asset accumulation approach will only operate effectively if we are confident that homes are likely to increase in value over time. In large parts of America, we have no reason to expect prices to rise regularly, and, in some cases, encouraging homeownership is a recipe for increased wealth loss.

As with any other properly functioning industry, the construction industry experiences technological improvements and increased efficiency. In the computer industry, technological progress has

[3] By current form, I mean without an accompanying tax on implicit housing services. If housing services were taxed, then the tax deduction would eliminate a bias favoring self-financing versus borrowing and could be quite justified. I do not believe that either a housing service tax or a consumption tax is on the table, so I will constrain my discussion to a comparison of deduction or not, holding everything else constant. Also notably, the discussion is pertinent primarily for the Americans for whom the deduction actually materially lowers their housing costs.

led to affordable laptops with computing power that would have been exorbitantly expensive in 1980. As a result, no one buys a computer assuming that it will rise in value. The real cost of building a home declined by about 3 percent in both the 1980s and the 1990s (Glaeser, Gyourko, and Saks, 2005). In principle, declining construction costs could also lead to homes becoming more affordable year after year.

Declining construction costs have not always led to declining home prices, because homes have two other crucial ingredients: land and permits. When those two ingredients are not scarce—and they are not in much of America—then construction prices dominate, and we should expect prices to stay flat or fall. Indeed, in many major metropolitan areas, real housing prices barely rose between 1980 and 2000. Even Census self-reported home values, which do not adjust for generally increasing housing quality, suggest that prices stayed flat between 1980 and 2000 for many of America's fastest growing cities, such as Las Vegas and Miami. In Houston, which is expanding, prices dropped dramatically. The core economics of housing prices suggests that this price stagnation is perfectly normal, because America has abundant land and because we expect the construction industry to become more efficient over time.

Nonetheless, even if housing prices decline over time, people will still accumulate wealth through homeownership if they pay down their mortgage. This savings channel has operated for millions of American households throughout history, but mortgage innovation and the subsidization of home mortgages can actually reduce this savings channel. Subsidizing homeownership will lead to savings if people are not regularly drawing value out of their homes with second mortgages. The home mortgage interest deduction, however, creates an incentive for people to draw more wealth out of their home by subsidizing the interest rate at which they will borrow. At the extreme, the interest deduction encourages people to have the maximum possible loan-to-value ratio, which ensures that they will have little wealth accumulation and great risk regarding changes in home values.

A similar effect is at work when we look at the fact that needing a down payment can affect wealth accumulation. A pure homeownership incentive will encourage people to save to ensure that they have the down payment needed to borrow. Subsidizing leverage and working to lower down payment requirements can work in the opposite direction. Subsidizing borrowing encourages lenders and borrowers to work together to ensure that the borrower needs as small of a down payment as possible. This subsidy reduces the incentive to save. Altogether, it is hard to see the home mortgage interest deduction as a sensible way to encourage Americans to accumulate wealth.

Progressivity and the Deduction

A second obvious problem with the home mortgage interest deduction is that its benefits go disproportionately to the wealthiest Americans. Poterba and Sinai (2008) estimate that the home mortgage interest deduction typically saves $523 per year in taxes for homeowning families earning between $40,000 and $75,000. The average annual tax savings for families earning more than $250,000 dollars is $5,459. This calculation treats current mortgage levels as fixed, and, if the deduction were eliminated, some people would pay down their mortgages and prices would also change. Nonetheless, the 10-fold gap in savings illustrates the extent to which the deduction's benefits flow to more prosperous individuals.

Many people may object to the regressive nature of the deduction on social equity grounds, but that is more a matter for philosophers and politicians than for economists. From a purely economic perspective, the regressive nature of the tax deduction may be problematic because it suggests that the deduction is poorly targeted. From a narrow economic perspective, the fact that the benefit goes disproportionately toward more prosperous individuals raises doubts about whether it effectively encourages homeownership.

Jesse Shapiro and I used the 1998 Survey of Consumer Finance to examine homeownership and deductibility by income group (Glaeser and Shapiro, 2003). We found that more than 90 percent of households in the top quintile of the income distribution are homeowners. This group appears to be at a corner solution in which essentially all rich people own houses. This finding surely reflects a strong connection between income and wanting to live in a single-family detached house (Glaeser, Kahn, and Rappaport, 2008). The model in the appendix also suggests that homeownership should yield higher benefits in high-quality units that require a lot of regular maintenance. Similarly, richer people may choose to modify their homes, which is easier to do in an owner-occupied house. In the model, the ease of modification in an owner-occupied home would come from the fact that any such investments in a rental unit would then lead to higher rent charges from the landlord.

Although it seems likely that most wealthy people would own houses with or without the tax deduction, poorer Americans are much more likely to be split between owning and renting. For example, people in the third, fourth, and fifth income deciles are almost evenly split between owning and renting. The Poterba and Sinai (2008) evidence, however, suggests that this group is benefiting far less from the deduction. Moreover, Glaeser and Shapiro (2003) found that these middle-income homeowners often do not even itemize when they file their annual income tax returns. As such, the deduction yields substantial benefits to people who are likely to own anyway and does much less for the middle-income group that seems more likely to be in the margin between owning and renting.

Glaeser and Shapiro (2003) also marshaled evidence suggesting that changes in the value of the deduction have only modest effects on homeownership levels. For example, as Poterba (1984) demonstrated, the value of the deduction is sharply tied to the inflation level, because nominal interest rate payments rise with inflation. Little evidence suggests, however, that homeownership rose substantially during periods when the deduction was more valuable. Glaeser and Shapiro also examined the effect of state-level heterogeneity in the value of the mortgage interest deduction and again found essentially no link between the size of the deduction and homeownership. This finding may reflect that the deduction is poorly targeted at increasing homeownership.

These criticisms are less telling toward the implicit mortgage subsidies that the GSEs created. The canard that suggested that these entities improved mortgage markets without subsidy has been proven false by the markets' collapse and subsequent bailout, and, as such, they can be seen as providing—in part—a second mortgage subsidy to homebuyers. This subsidy, however, is more effectively targeted toward middle-income Americans. Of course, other significant problems exist with the GSE model, which creates a private for-profit entity that can borrow at extremely low rates because of an implicit government guarantee.

Moreover, the GSE interest-rate subsidy, like the home mortgage interest deduction, also encourages Americans to borrow heavily to bet on the vicissitudes of the housing market. Before the housing crash in 2008, many believed that encouraging people to borrow money to buy housing was an attractive way to create an "ownership society" in which more Americans accumulated assets. After the crash, this homeownership incentive seems just as likely to have created a "foreclosure society," filled with people who were encouraged to bet everything on the unlikely event that housing prices would only go up.

The Deduction and Home Size

The home mortgage interest deduction also creates a subsidy that encourages people to buy bigger homes. Because the amount that can be deducted scales up with the size of the mortgage, and because the size of the mortgage is related to the size of the home, people have an incentive to buy bigger homes if they want to receive a larger deduction.

In the first half of the 20th century, it was possible to believe that Americans should be consuming more housing. In 1940, 35 percent of American homes lacked a sewage or septic connection, 20 percent had more than one person per room, and 9 percent had more than 1.5 people per room (Glaeser and Gyourko, 2008). In those years, legitimate public health concerns prompted an interest in larger, better quality homes. Moreover, in the wake of the Great Depression, it was certainly reasonable to consider in-kind and cash-based redistribution, and federal support of housing could be justified on those grounds as well.

By 2010, however, the case for encouraging Americans to own bigger houses had essentially disappeared and, today, a better case is to be made for discouraging living large. By 1990, only 1.1 percent of homes lacked a sewage or septic connection and, 10 years later, the Census stopped asking the question because decent sewage was so universal. In 2000, only 5.7 percent of American homes had more than one person per room. On average, each American has more than two rooms and 992 square feet of living space (Glaeser and Gyourko, 2008). This number is astonishingly large by both historical and world standards. Average living space per capita is less than 450 square feet in Great Britain, France, and Germany. America is an extraordinarily well-housed nation.

Even more astonishingly, poor Americans are, on average, living in very big homes. In the bottom quintile of the American income distribution, the average person has 855 square feet of living space, more than twice the overall average consumption in France and the United Kingdom (Glaeser and Gyourko, 2008). In fact, among homeowners, the connection between square footage and income is extremely weak, in part because poorer Americans often live in places where housing is extremely cheap.

Although little reason exists to encourage Americans to buy bigger homes, increasingly legitimate reasons encourage thinking that externalities are associated with more housing consumption. Perhaps the most obvious externality is associated with home energy consumption. Bigger homes typically use more electricity and home heating. According to the Residential Energy Consumption Survey homes with between 2,500 and 3,000 square feet of heated living space use 41 percent more kilowatt hours of electricity, 8 percent more natural gas, and 19 percent more fuel oil than

homes with between 1,500 and 2,000 square feet of heated space.[4] Greater energy use in larger homes leads to more carbon emissions, and, if those carbon emissions create a negative global externality associated with climate change, then the government should be pushing for smaller rather than larger homes.

Negative externalities are also associated with bigger homes if those homes occupy larger lots. A larger amount of ground space per capita implies more travel. Because this distortion is also linked to structure type, I revisit this issue in the section on homeownership, structure, and policies.

The Economic Logic of Ownership and Structure Type

The regressivity of the home mortgage interest deduction, or its effect on structure size, would occur even if everyone lived in a single-family detached home or if everyone lived in a multifamily dwelling. Because of the strong connection between homeownership and structure type, however, subsidizing homeownership implicitly subsidizes single-family dwellings. Although many condominium owners do take advantage of the deduction, a natural connection exists between ownership and structure type, and that means that subsidizing homeownership affects the physical structure of America. If all owners lived in single-family detached homes and all renters lived in multifamily dwellings, then subsidizing homeownership would be exactly the same as subsidizing single-family detached dwellings. Reality is not far from that extreme. In this section, I discuss the theory behind the structure-ownership connection.

I have already argued that the home mortgage interest deduction may not play that much of a role in encouraging homeownership; in that case, it may not play that much of a role in encouraging structural change either. Nonetheless, the deduction serves as a catalyst for homeownership and other federal policies, such as the implicit subsidies for Freddie Mac and Fannie Mae, which encourage people to own rather than rent. This section examines the effect that any such push for homeownership is likely to have on structure type.

Ultimately, homeownership is simply about the decision to assign property rights over an asset to one person or another. Therefore, making sense of homeownership requires investigating the core insights of research on property rights that have blossomed in recent decades (for example, Grossman and Hart, 1986). One hallmark of this literature is that the assignment of ownership can serve to mitigate the social losses associated with different contracting problems. For example, Klein, Crawford, and Alchian (1978) argued that the General Motors Corporation (G.M.) bought Fisher Body to minimize hold-up problems associated with relationship-specific investments. G.M. needed Fisher Body to invest in very specific products to meet its needs as a downstream customer, but once Fisher Body made those investments, G.M. could hold up Fisher Body and threaten to pay less. Klein (2006) shows that the difficulties of this relationship were solved only when G.M. bought Fisher Body.

That same intuition helps us understand homeownership. Two critical forms of investment relate to the homeownership decision. The first, emphasized by Henderson and Ioannides (1989), relates

[4] http://www.eia.doe.gov/emeu/recs/recs2005/c&e/spaceheating/pdf/allTables1-13.pdf.

to structure-specific maintenance or excessive use. Homes require a fair amount of care and they suffer when abused. Tenants have only a limited incentive to invest in their homes, and, as has been empirically well documented, rental homes depreciate more swiftly than owner-occupied housing (Shilling, Sirmans, and Dombrow, 1991). As Henderson and Ioannides (1989) wrote, assigning ownership to the occupier provides more incentives for taking better care of the housing units.

The model in the appendix explores this intuition. At its heart, the model follows Grossman and Hart (1986) and examines the connection between ownership-structure and some noncontractible investment, such as cleaning the gutters in a house or fighting mold. If the unit is owner occupied, the owner undertakes such investments; if the unit is rented, either the landlord or the tenant undertakes the investments.

Owners are more likely than renters to undertake maintenance operations for two major reasons. First, the owner captures the long-term price effects of the maintenance, which the renter does not. Second, the renter will actually suffer if better maintenance leads the landlord to raise rents. Both forces suggest that owner-occupiers will take better care of homes than renters.

It is less obvious, however, that owner-occupiers will take worse care of their homes than landlords. After all, the landlords have the same long-run price incentives and they benefit from the higher rent that they can charge as a result of maintenance.

The model in the appendix emphasizes two reasons why owner-occupiers may do more than landlords to invest in apartments and two reasons why landlords may invest more than owner-occupiers. One reason compelling landlords to invest less is that long-term rent contracts at a fixed rate reduce the connection between maintenance and rent and dilute the landlords' incentive to invest. Frankena (1975) made this point in the rent control literature. Even if the rent is flexible, if it is decided by ex post bargaining, the landlords will under-invest unless they have complete bargaining power.

A second force leading landlords to invest less money in their properties is that owners may use their own time to maintain the home, while landlords often hire outside help and must pay taxes on the wages earned by that help. Assume that an investment of 50 person-hours will increase the resale value of the unit by $1,000 dollars (ignoring discounting). Assume further that the market wage of both the owner-occupier and a maintenance worker hired to care for the unit equals $25 per hour and that the tax rate is 30 percent, so that the average tax wage rate is $17.50. The owner-occupier gains $1,000 in extra housing value (the capital gains of the home are untaxed) at a cost of $875. The landlord gains the same $1,000 in housing value but must pay $1,250. As a result of this price discrepancy, the owner-occupier is more likely to engage in the improvement. In fact, it is quite possible that the owner-occupier will engage in too much maintenance, at least relative to working outside the home, because wages are taxed but the benefits from home maintenance are not. Of course, if externalities from home maintenance exist, then private maintenance will be too low without the tax wedge advantage.

An added advantage from owner-occupier maintenance is that the owner-occupier lives in the home, which means the person providing the maintenance has more information about the state of the home and fewer travel costs. Some of the advantages of owner-occupancy versus absent landlord vanish when the landlord also lives in the building and provides maintenance personally.

This situation is not unusual in lower density dwellings, such as Boston's triple decker (three-story) apartment buildings, where the owner often lives in the home and does not need to travel. A tax wedge still exists, however, because the higher rents that come from landlord maintenance get taxed, while the quality-of-life benefits that the owner-occupier receives from maintenance do not.

Other factors challenge the tenant's advantage in providing maintenance and lead to landlord maintenance. The landlord may either have or be able to hire specialized human capital in home maintenance. If external maintenance providers are significantly more efficient than the owner-occupier is, then hiring such providers may eat into the tax wedge advantage of personal maintenance. If external provision is much better, then the owner-occupier may hire external help as well, which eliminates the tax wedge altogether. As long as the owner-occupier can hire the same outside talent at the same wage that the landlord pays, this scenario will not lead to less maintenance by the owner-occupier. If the landlord has more knowledge of the outside market for maintenance talent or if there are returns to scale in hiring such talent, then the landlord may indeed have a maintenance edge. A second force that may induce more maintenance among landlords is regulations that may require a certain level of maintenance.

As Henderson and Ioannides (1989) argued, maintenance-related benefits help explain homeownership levels and in what situations to expect more homeownership. The model in the appendix unsurprisingly predicts that higher tax levels will lead to more homeownership, because the value of the tax wedge is higher and because people who are particularly unskilled at home maintenance, relative to landlords, will be more likely to rent. Assuming that landlords do provide less maintenance because rents do not adjust closely to investments, then more ownership of structures will occur in situations in which maintenance is more valuable.

The model also considers multifamily units, in which only two types of maintenance exist. Some maintenance investments are specific to the unit, but others are specific to the building, such as maintaining the roof or the boiler. The basic logic of such interventions is similar to the algebra already discussed, except insofar as the maintenance action creates externalities to neighbors either because the actual maintenance creates negative externalities while it is going on, or because unit-specific maintenance makes the block of units more attractive as a whole. Although it is possible for individual owner-occupiers in a multifamily building to undertake such actions on their own, it is more natural for them to coordinate in some fashion with a condominium or cooperative association.

Once an association makes a maintenance decision, however, a great deal can go wrong. Coordination costs, especially those involving the time of owners, may be substantial. Delegating out management can be very expensive as well. The model assumes that these coordination costs scale up with the size of the building.

That assumption leads to the prediction that owner-occupancy will be more common for smaller structures than for bigger structures. For smaller structures, the tax wedge and the fact that owner-occupiers internalize all the benefits from maintenance dominate and encourage ownership. For larger structures, the costs of coordinating activities dominate and as a result, it is more efficient to have a single landlord, even one who is under-investing in maintenance. This logic suggests that ownership should be less common in bigger buildings.

Finally, the model turns to social capital investments, which are defined as investments that affect the quality of the neighborhood but not the structure. These investments require time but not money and only the residents themselves can make them. These investments may also create externalities. In general, we should expect to see more investments from homeowners than from renters, both because homeowners internalize the benefits of future price increases and they do not lose from increases in rents. This tendency for homeowners to make social capital investments provides one justification for the correlations between homeownership and social capital, as found by DiPasquale and Glaeser (1999) and others.

This connection is particularly relevant if investments in social capital create positive externalities. In that case, this connection becomes the primary justification of national pro-homeownership policies. I now assume that the social benefits from these investments are proportional to the private benefits and ask what conditions might increase the size of the homeownership externality.

One particular question is whether structure type or individual characteristics will connect with these investments. For example, it is natural to assume that both the benefits and costs of investment are a function of the size of the building. It might be easier to connect with others in large dense structures. Alternatively, the benefits of social capital might be lower or higher in denser areas. Social capital might be less valuable if people are more connected to the streets in shorter buildings or it might be more valuable if the community associations are needed to make blocks safer.

The model shows that the relationship between building size and the cost of developing social capital is critical in determining whether the effect of homeownership on social capital increases with building size. If bigger buildings reduce the cost of interactions, then the social capital-related benefits of ownership, and any externality from that social capital, will actually be larger in owner-occupied buildings.

Another way in which individual characteristics or structure type might affect the decision to subsidize social capital by subsidizing homeownership is to influence the size of the externality relative to private benefits. Any variable that increases the size of the external benefits from these investments without affecting the private decision to invest will naturally make public subsidy more appealing. The question then becomes empirical: What do we know about the differential effect of homeownership on forms of social capital investment and what do we know about the size of the externalities?

The model appendix also suggests that the link between social capital and homeownership can be reversed if large, dense dwellings act to lower the costs of social interactions sufficiently. If people who live near one another in dense neighborhoods find it much easier to interact than do people who are spread out at long distances, then the subsidization of homeownership can perversely lower social capital, even though homeownership—holding structure constant—increases investment in social capital. We will discuss the evidence on this possibility in the next section.

Evidence on Homeownership, Structure, and Policies

In this more empirical section, I explore five different topics and discuss the policy issues that surround them. The first subsection recalls the basic facts about homeownership and structure type. The second subsection looks at the connections among structure type, ownership, cities, and density. Subsidizing homeownership does seem to mean subsidizing suburbia. The third section focuses on the pollution and congestion externalities associated with subsidizing ownership and single-family detached homes. The fourth section focuses on the economic effect of subsidizing people to live in metropolitan areas where single-family detached homes are more common. The fifth section returns to the social consequences of these policies.

Homeownership and Structure Type

Exhibit 1 shows the breakdown of ownership by structure type using the 1970 and 2000 Census Individual Public Use Microsample. The results are as follows: first column, the entire population in 2000; second column, the top quintile of the population by income in 2000; third column, the lower quintile of the population by income in 2000; and fourth column, 1970. I have excluded mobile homes and other nonpermanent structures.

The first row gives results for single-family detached housing. In the United States as a whole in 2000, 86.8 percent of these units were owner-occupied and 13.2 percent were rented in 2000. Among the richest quintile of Americans, the ownership rate in this structure type was an astonishing

Exhibit 1

Ownership of Housing Units by Structure Type, 1970 and 2000

Structure Type	Ownership Status	(1) Entire Population, 2000 (%)	(2) Top Quintile by Income, 2000 (%)	(3) Bottom Quintile by Income, 2000 (%)	(4) Entire Population, 1970 (%)
1-family house, detached	Owned	86.77	95.64	73.35	81.64
	Rented	13.23	4.36	26.65	18.36
1-family house, attached	Owned	65.04	84.09	45.72	58.45
	Rented	34.96	15.91	54.28	41.55
2-family building	Owned	26.04	53.82	15.08	33.71
	Rented	73.96	46.18	84.92	66.29
3- to 4-family building	Owned	13.69	36.34	6.99	14.12
	Rented	86.31	63.66	93.01	85.88
5- to 9-family building	Owned	10.04	28.05	4.66	6.02
	Rented	89.96	71.95	95.34	93.98
10- to 19-family building	Owned	9.10	24.88	4.84	3.90
	Rented	90.90	75.12	95.16	96.10
20- to 49-family building	Owned	11.63	34.24	5.91	3.93
	Rented	88.37	65.76	94.09	96.07
50-family or larger building	Owned	13.17	37.46	5.43	6.51
	Rented	86.83	62.54	94.57	93.49

Source: Ruggles, Steven, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. 2010. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota

95.6 percent. Even among the poorest quintile, the ownership rate was 73.3 percent. In 1970, the ownership rate for single-family detached houses was 81.6 percent. The rental of a single-family detached unit is relatively rare and concentrated among poorer Americans.

Single-family attached homes are significantly more likely to be rented. In this group, the total homeownership rate falls to 65 percent. The homeownership rate is 84 percent among the richest quintile but only 46 percent among the poorest quintile. In 1970, the ownership rate for attached single-family homes was 58 percent. This is clearly a middle category in which ownership and renting both are attractive. Two-family homes occupy the same place, resulting in a substantial mixture between owner-occupied and rental units, and renting is, as always, higher among poorer Americans.

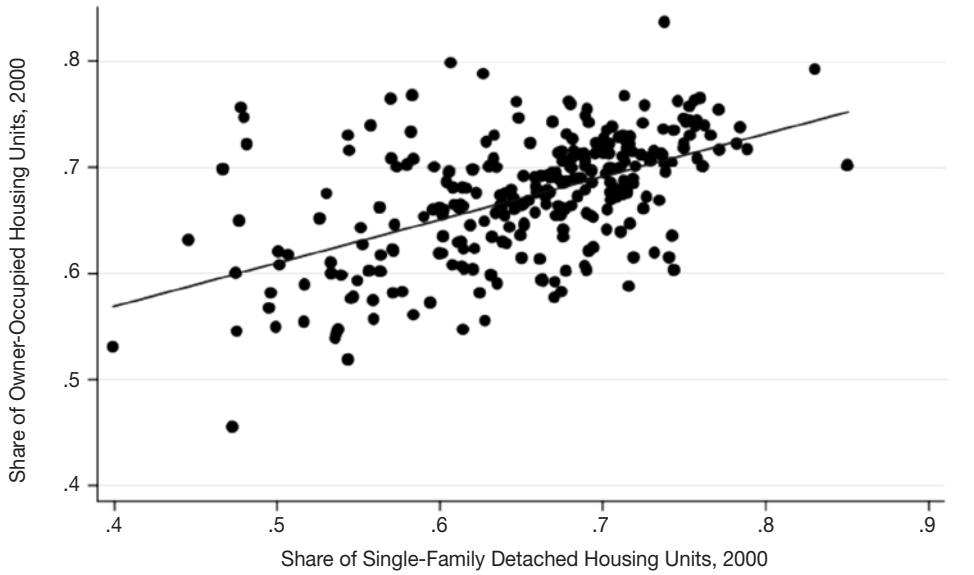
When we consider three- or four-family units, however, the rental rate skyrockets. In the United States as a whole, the ownership rate in three- or four-unit structures is only 13.7 percent. This figure has changed little since 1970, when the rate was 14.1 percent. Even among the richest quintile of Americans, only 36 percent own if they live in three- or four-unit structures.

Among even larger structures, the ownership rate is typically even lower. In structures with 5 to 50 units, the rental rate is more than 88 percent. This figure is lower than it was in 1970, which perhaps reflects the fact that the home mortgage interest deduction provides a large incentive to own expensive condominiums.

The tight connection between structure type and ownership also holds across places. Exhibit 2 shows the -.68 correlation between the share of households that are single-family detached and the share of households that are owner occupied. The large differences in structure type across

Exhibit 2

Correlation Between Share of Owner-Occupied and Single-Family Detached Housing Units, by MSA



MSA = metropolitan statistical area.

metropolitan areas suggest that subsidizing single-family detached dwellings not only encourages people to live in single-family dwellings within metropolitan areas, but it also encourages people to live in metropolitan areas that are more oriented toward single-family detached dwellings.

Does the connection between homeownership and structure type reflect the maintenance- and investment-related issues discussed in the previous section? Previous work has already shown that rental units depreciate more quickly than owner-occupied units (Shilling, Sirmans, and Dombrow, 1991). Exhibit 3 reminds us of the difference in quality levels between owner-occupied and rental units. Using the American Housing Survey, I separated properties into four groups, by ownership type and structure type. Our two structure type classifications are single-family detached structures and structures with five or more units.

Across many types of problems, rental units had significantly more examples of maintenance problems. For example, almost 2.5 percent of renter-occupied units had open cracks or holes, but the share of owner-occupied units with these problems was less than 1.3 percent. Nearly 3.5 percent of renter-occupied heads of household described their housing as "moderately inadequate" or "severely inadequate," but only 1 percent of owner-occupied heads of household described their housing this way.

These differences also hold within structure types. For example, 2.8 percent of renter-occupied single-family detached dwellings had open cracks or holes, as opposed to 1.2 percent of owner-occupied single-family detached dwellings. More than 2 percent of renter-occupied multiunit dwellings had this problem, compared with less than 1 percent of owner-occupied multiunit dwellings. In rented single-family homes and multifamily homes, 1.25 and 1.04 percent, respectively, reported broken plaster and peeling paint, but in owner-occupied homes the corresponding numbers were 0.49 and 0.35 percent.

For the data in the second to last column, I tested whether the gap in problems between owner-occupied and rental units is statistically larger for single-family detached dwellings than for multiunit dwellings. I reported the t-statistic for the interaction between owner-occupied units and single-family detached structures. In some cases, I found that this is the case. For example, the reduction in large, open cracks that is associated with owner-occupied housing is larger in single-family detached units.

Some of this difference may reflect differences in the demographics of the residents. In the last column, I show the t-statistic on the interaction between structure type and ownership when I have also controlled household income, education, race, and age. In this case, I found somewhat different results that are still generally compatible with the view that ownership reduces maintenance problems more in single-family detached dwellings.

One interpretation of these mixed results is that, although renting multifamily dwellings still leads to fewer maintenance problems, it also leads to less time and effort spent in coordinating responses to those problems, as the model suggests. Because I am unable to measure these costs, this statement must remain speculation.

Overall, however, the connection between structure type and ownership type is clear. Moreover, some evidence suggests that this link is related to a core advantage that ownership provides in

Exhibit 3

Comparing Quality Levels of Owner-Occupied and Rental Units, 2007

	Renter-Occupied Units			Owner-Occupied Units			t-statistic of Owner-Occupied, Single Family Detached Interaction	
	Total Units	Single-Family Detached Units	5-Family or Larger Buildings	Total Units	Single-Family Detached Units	5-Family or Larger Buildings	Without Controls	With Controls
Total units	35,054	8,926	15,223	75,665	62,538	2,267		
Percent of total		25%	43%		83%	3%		
Rating of the neighborhood as a place to live, on a scale of 1–10 (weighted average)	7.05	7.41	6.92	7.61	7.66	7.60	3.12	3.26
Rating of the unit as a place to live, on a scale of 1–10 (weighted average)	7.09	7.29	7.05	7.85	7.90	7.81	1.33	1.61
Percent of head of households who describe their housing as "moderately inadequate" or "severely inadequate"	3.46%	3.05%	3.86%	1.07%	1.00%	1.76%	0.02	0.52
Signs of rodents in the last 3 months	2.53%	3.29%	2.12%	2.06%	2.06%	0.84%	0.35	0.10
Open cracks or holes (interior)	2.49%	2.80%	2.15%	1.27%	1.24%	0.93%	1.10	1.29
Holes in the floor of 4-inch diameter or more (interior)	0.60%	0.80%	0.43%	0.21%	0.17%	0.04%	1.99	2.50
Broken plaster or peeling paint (interior)	1.09%	1.25%	1.04%	0.48%	0.49%	0.35%	0.56	0.80
Unit was uncomfortably cold for 24 or more hours last winter	3.49%	4.29%	2.90%	2.51%	2.50%	2.29%	3.09	3.33

Source: American Housing Survey Microdata, 2007

addressing the incentive problems involved in maintaining single-family detached houses. The implication of this advantage for policy is that subsidizing ownership implicitly means subsidizing single-family detached housing.

Structure Type, Ownership, Cities, and Density

Because of the link between homeownership and structure type, one consequence of the home mortgage interest deduction, which would result from any pro-homeownership policy, is that people move away from rental housing, which is far more likely to be in larger buildings that are closer to city centers. The link between structure type and ownership also explains why renting is more likely in urban cores and ownership is more likely outside of those areas. High land values in urban centers make it more attractive to build upwards, which, in turn, makes renting more attractive.

The link between residence in central cities and renting is fairly universal. According to the 2006–2008 American Community Survey, 76 percent of Manhattan residents rent but 64 percent of the residents in suburban Westchester County own their own homes. In Boston, 62 percent of residents rent, but 65 percent of residents in suburban Middlesex County own. In Chicago, 51 percent of residents rent, but 62 percent of the residents in Cook County own. This pattern is weaker but still present in the newer areas of the Sunbelt: in Los Angeles 61 percent of city residents rent, but 62 percent in Orange County own. In Atlanta, 49 percent of city residents rent, but 59 percent of Clinton County residents own. The connection between central city location and homeownership is sufficiently strong that encouraging homeownership is implicitly encouraging deurbanization.

Across metropolitan areas, little correlation exists between density and owning among the least dense areas. In these places, ownership is enormously common and little variation is evident in the share of single-family detached dwellings, which tends to be quite high. Among the dense 50 percent of metropolitan areas, the correlation among area density, renting, and share of the population that lives in single-family detached dwellings is much stronger. In this most dense 50 percent of metropolitan areas, the correlation between the logarithm of population density in 2000 and the share of units that are rented is 38 percent and the correlation between that density measure and the share of units that are single-family detached is 55 percent.

These correlations and the significant variation in areas across space suggest that subsidizing homeownership is implicitly subsidizing people to move away from city centers and to move toward lower density metropolitan areas. These effects are likely to increase pollution and congestion, at least within areas, and to lead people to live in less economically productive areas. I explore those effects next.

Structure Type, Ownership, Energy Use, and Congestion

One reason to be concerned about a large federal program that encourages people to live in single-family detached houses is that such houses are typically farther away from urban centers. The distance from the city center is associated with more driving, which can create externalities both through emissions and through traffic. For example, using the National Household Travel Survey, Glaeser and Kahn (2010) found that, when a household's distance to the central business district doubles, the household's annual gasoline usage increases by 44 gallons, even holding household

income and neighborhood density constant. A strong empirical link also exists between the density of an area and per-household fuel consumption (Glaeser and Kahn, 2010). Using the National Household Travel Survey, I estimated that, as density levels drop by 50 percent, households use an average of 81 additional gallons per year, holding household income and distance to the city center constant. Encouraging an urban exodus increases carbon emissions.

The same logic holds true across metropolitan areas. Glaeser and Kahn (2010) found that gasoline usage increased with metropolitan decentralization and decreased with metropolitan population density. By encouraging people to move to less centralized, less dense areas, promoting homeownership increases driving and energy use.

Exhibit 4 shows results on commuting by car, structure type, and homeownership using the 2000 Census. The table reports regressions, in which I control for individual income and age. I found that homeowners are 11 percent more likely to commute by car than are renters. In the second regression, I documented the strong connection between structure type and car commuting. The third regression shows that more than one-half of the connection between homeownership and car commuting reflects the connection between ownership and structure type.

Regressions (4)–(6) control for metropolitan area fixed effects. The effects get smaller but remain significant. These regressions suggest that part of the effect of ownership subsidies works by pushing people toward metropolitan areas that are more car friendly.

Exhibit 4

Commuting by Car Relating to Home Ownership and Housing Type, 2000

	Dependent Variable: Commuting by Car (1=yes, 0=no)					
	(1)	(2)	(3)	(4)	(5)	(6)
Home ownership	0.109		0.038	0.079		0.042
	(1089.34)**		(300.57)**	(787.45)**		(335.30)**
1-family house, detached		0.127	0.103		0.092	0.066
		(646.06)**	(488.68)**		(471.14)**	(312.27)**
1-family house, attached		0.06	0.043		0.053	0.035
		(237.37)**	(166.95)**		(210.46)**	(134.73)**
2-family building		0.021	0.017		0.03	0.026
		(76.92)**	(62.13)**		(114.35)**	(98.78)**
3- to 4-family building						
5-family or larger building		– 0.024	– 0.022		– 0.006	– 0.004
		(113.84)**	(107.41)**		(28.77)**	(21.14)**
MSA Controls Used?	***No***	***No***	***No***	***Yes***	***Yes***	***Yes***
Constant	– 1.283	– 1.302	– 1.280	– 1.299	– 1.330	– 1.307
	(2697.55)**	(2620.97)**	(2549.65)**	(1078.62)**	(1096.65)**	(1076.19)**
Observations	9.41e+07	9.41e+07	9.41e+07	9.41e+07	9.41e+07	9.41e+07
R-squared	0.30	0.31	0.31	0.32	0.32	0.33

MSA = metropolitan statistical area.

*Notes: (1) Absolute value of t statistics in parentheses. (2) ** Significant at 1%. (3) All regressions control for age and income.*

Source: Ruggles, Steven, J., Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. 2010. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota

Driving longer distances and owning a car are also associated with negative externalities associated with traffic. Living in multifamily dwellings in the urban center ensures far less traffic on highways than does driving into the city center from single-family detached dwellings in the suburbs. By subsidizing a move away from larger multifamily units, the home mortgage interest deduction is implicitly adding to America's traffic problem. In this case, subsidizing low-density living is more likely to be a problem within metropolitan areas than across metropolitan areas, because traffic problems are actually less severe in lower density areas.

Subsidizing single-family dwellings also means increasing energy use, because such dwellings are typically larger and use more energy for both home heating and electricity. Per-unit electricity usage is 36 percent higher in single-family detached dwellings than in apartment buildings with five or more units. Natural gas usage is 45 percent higher.[5] These results do not control for household size or income, but Glaeser and Kahn (2010) did control for these factors and still found significantly lower household energy use for households that live in urban cores.

The policy implication of this energy finding is that living in single-family detached dwellings creates an externality because of energy use and traffic congestion. The best intervention would be to tax energy use and traffic at its social cost. As long as America lacks such taxes, however, subsidizing single-family detached dwellings only increases driving and home energy use. This increase in driving and home energy use provides a reason to rethink our subsidizing of homeownership, which implicitly subsidizes single-family detached dwellings.

The Economic Consequences of Promoting Single-Family Dwellings

Another potential cost of subsidizing single-family detached housing is that it will distort location decisions across metropolitan areas in a way that reduces aggregate productivity. Across metropolitan areas, density is strongly correlated with incomes and productivity (Ciccone and Hall, 1996). Glaeser and Gottlieb (2008) found that, on average, as density doubles, productivity rises by 3 percent, holding individual characteristics constant. I found the same effect for population size, when both population and density are included in the regression. A long and distinguished urban literature focuses on this fact and attempts to understand why productivity rises in dense agglomerations.

Across metropolitan areas, there is a -.32 correlation between the share of the housing stock that is single-family detached and median income in the 2000 Census. An even larger -.42 correlation occurs between the share of the population that lives in single-family detached homes and the logarithm of per-capita gross metropolitan product. Similarly, a positive correlation exists between both of these economic productivity variables and the share of the population that rents in the metropolitan area. Because subsidizing homeownership creates incentives to move to metropolitan areas that specialize in single-family detached homes, these incentives may be pushing Americans out of the denser, more productive metropolitan areas.

The income tax creates an externality associated with earning more. When workers earn higher wages because they live in a more productive area, others experience some of the benefit from their

[5] http://www.eia.doe.gov/emeu/recs/recs2005/c&e/spaceheating/pdf/allTables1-13.pdf.

earnings because of the higher taxes that those workers pay. At the city level, this externality means that too few people move into high-earnings areas, as emphasized by Albouy (2009). Subsidizing homeownership only makes this worse.

The Social Consequences of Subsidizing Single-Unit Dwellings

Social issues may be associated with incentivizing Americans to leave denser environments. If proximity breeds empathy, as Luttmer's work (2001) shows that support for redistribution rises among people who live near poorer people of the same race, then distance may reduce that empathy. Because poorer people tend to live disproportionately in cities (Glaeser, Kahn, and Rappaport, 2008), bribing wealthier people to leave higher density apartments is increasing the physical, and possibly also the social, distance between rich and poor.

In general, we believe that homeownership leads to a greater investment in social capital, as suggested by DiPasquale and Glaeser (1999). But Glaeser and Gottlieb (2006) also found that certain social activities, such as writing to a newspaper and attending a place of worship, are higher in dense areas. By encouraging people to leave dense areas, the home mortgage interest deduction is implicitly discouraging those social investments. As suggested by the model, the pure ownership effect of the deduction runs up against the fact that the costs of social interaction may be higher at longer distances, and that should make us more cautious about thinking that the deduction always promotes better citizenship.

One does not need to accept these speculative arguments to conclude that the home mortgage interest deduction needs to be rethought, in part, because of its connection with structure type. No one has convincingly shown that apartment living creates negative externalities, and it is certainly clear that in the area of energy use, living in large single-family homes leads to more carbon emissions. In the absence of compelling evidence for negative externalities, the natural stance of the economist is presumably to favor a level playing field between apartments and homes. The current policy is decidedly not a level playing field.

If encouraging larger homes also encourages larger lots, then this situation also creates negative—not positive—externalities. Of course, as I discuss in the next section, local policies that limit the development of high-density housing similarly lead to more driving and more carbon usage.

Rental Housing, Structure Type, and Local Barriers to Building

One unfortunate side effect of reducing the home mortgage interest deduction could be an increase in rental rates, at least in the short run. If the demand for rental units rises, then prices will rise. One natural means of counteracting that force is to increase the supply of rental housing by loosening the barriers to building multiunit housing.

The federal pro-homeownership policies are not the only public policies that stack the deck against higher density rental housing. At the local level, communities have long made it difficult to build, with land use restrictions that are often specifically targeted at multiunit dwellings. Although very small governmental units frequently enact these restrictions, they can have national implications. A reasonable case can be made that the extraordinary post-1990 growth of Atlanta, Dallas, Houston, and Phoenix, and the far more limited expansion of the regions around New York, Boston, and San

Francisco, owes much to the differences in land use regulations between these two sets of places (Glaeser and Tobio, 2008). Restricting high-density dwelling can lead to higher carbon emissions and movement away from more productive areas, which will have an adverse effect on national income. These restricting factors make local land use policy a national concern.

In this section, I review two types of land use policies and their impact on multiunit dwellings and prices. First, I consider suburban land use restrictions. I then consider land use policies within the large cities that are the natural places for tall, multiunit structures. I then discuss the pattern of land use restrictions across space.

Land Use Restrictions in the Suburbs

A long and distinguished literature exists on land use restrictions in suburban areas. For example, Katz and Rosen (1987) examined growth controls in the San Francisco region and found less development and higher prices accompanied these limits on building. Much of this literature has focused on a narrow region of the country, because institutional structures differ from state to state and rules often change at very low levels of geography. No one section of the country can be considered typical, and, at best, a particular region can be illustrative of only a particular style of land use policy.

With those caveats, I will briefly describe the fairly intensive investigation of land use rules in greater Boston undertaken by Amy Dain, Jenny Schuetz, Bryce Ward, and me, which is found in Glaeser, Schuetz, and Ward (2006) and Schuetz (2008). This work gives a sense of the extent to which some areas have stacked the deck against multifamily dwelling. Both papers focused on 187 cities and towns that were within 50 miles of Boston. Boston itself was not included because the city's planning process—like that of many larger cities—is quite *sui generis*. We used a combination of census data, Banker & Tradesman sales price data, zoning data from the MassGIS system, and the results of an extensive questionnaire filled out by representatives of each of the 187 cities and towns.

Although a great maze of regulations affects various forms of development, two rules are particularly relevant for the development of multifamily dwellings: (1) much land is zoned to allow only single-family detached dwellings, and (2) In areas that do allow multifamily dwellings, restrictions on minimum lot size per unit make multifamily dwellings more difficult to build.

For example, Schuetz (2008) found that 127 out of 186 areas have literally no land where by-right development (that is, no special permits or procedures are needed) of multifamily dwellings could occur. Another 47 have less than 10 percent of their area where by-right multifamily housing could occur. Sixty communities have no land area that allows multifamily dwellings even with a special permit, while an additional 65 allow multifamily construction by special permit on less than 10 percent of their land area. These data are fairly remarkable, because the survey includes places such as Brookline and Cambridge, which are quite close to Boston and quite urban in character.

Moreover, those places that do allow multifamily dwellings often have fairly large minimum lot sizes associated with the development. For example, out of the 59 communities that allowed some multifamily building by right, 26 required a minimum lot size of 20,000 square feet. Of the 126 communities that allowed multifamily dwelling somewhere, by special permit, 79 required a lot size of more than 20,000 square feet and 28 required a lot size of more than 80,000 square feet. In other words, these places allow multifamily dwellings but only if each unit is associated with about 2 acres of land.

We have every reason to think that these rules are effective at limiting the production of multifamily dwellings. Schuetz (2008) found a strong, positive effect of the number of by-right lots on the amount of multifamily permitting. Glaeser, Schuetz, and Ward (2006) found that more multifamily permitting occurs as the average lot size for multifamily units decline. These results control for distance to Boston and historic density levels, which suggests that these rules are not merely reflecting the low state of demand for multifamily dwellings in outlying areas. The rules preventing the construction of multifamily units are, in fact, limiting the supply of new multifamily units.[6]

The increase in land use controls may explain the significant decline in permitting within the Boston region and, in particular, multifamily permitting. In the 1960s, 172,459 permits were issued in the Boston area, but, even though prices rose dramatically, only 84,105 permits were issued in the 1990s. In the 1960s, more than one-half of all permits were for multifamily construction. In the 1990s, more than 80 percent of permits were for single-family housing. Some of this change surely reflects the decline in publicly subsidized multiunit projects, but it is hard not to suspect that limitations on multifamily building played some role in the massive change.

The work on greater Boston illustrates a region that has made it quite difficult to build multiunit dwellings. Because multiunit dwellings are disproportionately rental, this difficulty for people to build multifamily units means that the supply of rental units is likely to have also been restricted by these rules. In some cases, these communities are sufficiently far from the metropolitan area's core so that it would be surprising to find much multiunit building, but these rules also apply to many inner ring suburbs, where multiunit dwellings are quite plausible. Moreover, some of these outlying areas might also have developed higher density neighborhoods if zoning had allowed it, perhaps built around a major employer or a rail stop.

Land Use Restrictions in the City

Restrictions on multiunit construction tend to be far more severe in suburbs than in central cities, but the barriers to building in the cities may be more important because they affect the area that is the most natural place to build multifamily units. Suburban building is difficult, but urban building is far more complicated. Few green fields for new construction exist in older cities, and most large buildings get produced through a complicated, ad hoc procedure. Glaeser, Gyourko, and Saks (2005) used condominium sales prices and construction costs to estimate that perhaps one-half of the cost of units in New York City can be seen as the cost of restrictions on building up, but their approach has little ability to determine which specific rules and regulations are most important in driving down construction and driving up costs.

It is certainly clear that permitting activity has decreased in many older cities and that, in many places, the construction of rental units has particularly slowed. Glaeser, Gyourko, and Saks (2005) documented the decline in new construction in New York City between the 1960s and the 1990s, which is all the more remarkable because prices rose dramatically over this time period. In the

[6] Schuetz (2008) found little clear connection, however, between these policies and rental costs, perhaps because neighboring areas are close substitutes for one another, or because her work was not able to control for many unit characteristics.

country as a whole, the number of new rental units being produced declined dramatically from the 1980s, when 358,000 new multiunit rental properties were produced during an average year,[7] to the last decade, when 179,000 new multiunit rental properties were produced annually.[8]

Cities constrain the development of new buildings in many ways. The permitting process can take years, zoning codes often restrict building heights, and older areas can be landmarked in ways that restrict new development. It is often easy to see the increasing scope of regulations that restrict redevelopment of older areas, even though it may be hard to ascertain the effect of any particular policy. For example, Glaeser (2010) described the growth of historic preservation districts in Manhattan, and interest continues in expanding the size of Manhattan's historic districts, which would make even more areas of the city essentially off limits to new, larger scale development.

During the past 45 years, large areas of New York City have come to be part of historic districts. The estimate in Glaeser (2010) is that nearly 16 percent of Manhattan south of 96th street (excluding parks) is in a historic district. Moreover, those districts occupy much of the city's best real estate, such as the land abutting Central Park. More than one-half of the land in historic districts is made up of three very large districts: Greenwich Village (added in 1969), the Upper East Side District (added in 1981), and the Upper West Side District (added in 1991). Since the Mayor Dinkins era, relatively limited new districting activity has occurred in Manhattan.

The Landmarks Preservation Commission, which reviews all proposals to change exteriors within historic districts, is charged with maintaining the traditional character of these areas. It should be no surprise, therefore, that they have not typically approved large-scale demolitions that would create taller buildings. For example, the Landmarks Commission denied permission to the developer Aby Rosen, who proposed erecting a Norman Foster-designed tower on 980 Madison Avenue that would have kept the façade of the Sotheby-Park-Bernet building. Glaeser (2010) reported evidence suggesting that significantly fewer tall buildings have been constructed, and less growth in the number of housing units has occurred, in historic districts.

Glaeser (2010) also reported the demographic changes that happened in historic districts relative to other areas in Manhattan south of 96th street. Over time, the demographics of the areas that became historic districts became relatively richer, better educated, and more White. The prices in these areas also rose faster than in other comparable areas. Perhaps because they are not building new rental housing, these areas are becoming ever more elite. Jane Jacobs postulated that preserving older housing would make cities more diverse, but historic districts appear to be having the opposite effect.

I do not mean to suggest that preservation districts are the most important means by which cities restrict the development of highrise units. They surely are not, at least in the United States. They simply illustrate one of the many ways in which new residential construction is limited in older cities. By restricting new construction, cities are not providing as much new housing as they could, which, in turn, increases congestion by pushing development out toward the urban fringe and increases pollution by pushing people into larger suburban homes.

[7] http://www.census.gov/const/startsusintenta.pdf.

[8] http://www.census.gov/const/www/quarterly_starts_completions.pdf.

Patterns Across Metropolitan Areas

Although much of the research on land use restrictions has focused on particular policies within metropolitan areas, a smaller literature looks across areas. Some papers (for example, Glaeser and Gyourko, 2002) have drawn inferences based on prices, construction levels, and land density alone. That work certainly seems to suggest that important supply differences exist across space that cannot be accounted for by land availability, and that the value of land is itself far too low to explain differences in home prices across metropolitan areas. Other papers (for example, Gyourko, Saiz, and Summers, 2007; Saiz, 2010) have used the Wharton Land Use Restrictiveness Index to try to explain the differences in home prices across metropolitan statistical areas.[9]

The Wharton Index was based on a questionnaire sent out to land use professionals throughout the country. Gyourko, Saiz, and Summers (2007) then averaged the responses to relevant questions to form a place-specific index. The place-specific indices were then averaged to form a metropolitan-areawide index of land use regulation. Typically, the index is normalized to have a mean of 0 and a standard deviation of 1 across places. Several cross-metropolitan area facts have been established using the index.

One fact is that a robust positive correlation exists between the Wharton Index and price across metropolitan areas (Gyourko, 2009). For example, a one-standard-deviation increase in the index is associated with a 23-percent increase in housing prices. Naturally, a causal interpretation of this relationship is difficult because the Wharton Index is associated with many other factors, such as the education level of the metropolitan area. Saiz (2010) also showed that the index is positively correlated with topographic limits to supply, such as hilliness and coastline. Saiz (2010) also demonstrated that demand shocks have had more of a positive effect on price in areas with more land use regulation.

Other work has looked at the effect of land use control indices on population and local economic growth. For example, Nandwa and Ogura (2010) found a negative correlation among several land use indices and area growth. The Wharton Index correlation with growth is negative but not significantly so, perhaps because the index is correlated with hard-to-measure variables that are positively correlated with demand.

Glaeser and Kahn (2010) looked at the relationship between the Wharton Index and carbon emissions for new households across metropolitan areas. I found that the more restrictive areas have less energy use, primarily because of their temperate climates. Disproportionately restricting the growth of more environmentally friendly areas, such as coastal California, presumably shifts new development toward less environmentally friendly, but more pro-development areas, such as Houston.

[9] Malpezzi (1996) played an important role in developing the index.

Conclusion: Toward a New Housing Policy

What would an ideal national housing policy look like? A purist might hold that because the citizenship benefits of homeownership have not been conclusively proven, it makes sense to have no pro-homeownership bias whatsoever. Perhaps the tax system should move away from an earnings tax toward a consumption tax, which would favor all forms of investment, but the purist's position would avoid any pro-homeownership bias whatsoever.

A less extreme position is to accept that some benefits from homeownership do come from greater investment in social capital. In this case, it becomes reasonable to subsidize homeownership in some way. But even with a belief in subsidizing homeownership, the current system still seems poorly targeted, highly regressive, and excessively engineered to encourage borrowing money and buying big homes.

One feasible path to reform would be to gradually lower the upper limit on the home mortgage interest deduction by $100,000 per year over the next 7 years. Currently, the mortgage interest deduction is capped at $1 million. President George W. Bush's tax reform panel suggested that this should be cut substantially. To avoid creating too much change in the housing market too quickly, the cap could be cut by $100,000 per year for the next 7 years. This gradualist approach would be unlikely to significantly roil markets and it would have little effect on the vast majority of Americans whose mortgages are below $300,000.

By lowering the cap on the deduction, the extreme incentives to borrow money to buy big houses would be reduced. The incentives to buy houses that cost more than $300,000 would be substantially reduced. Some of the worst distortions associated with the home mortgage interest deduction would be eliminated. The artificial incentive to borrow would be capped at $300,000, and the artificial incentive to buy would drop off at somewhat more than that amount. A lower cap on the home mortgage interest deduction would achieve some of the benefits of eliminating the deduction altogether with a much less drastic policy shift.

After America achieved a lower tax deduction, it would be possible to envision proposing an alternative situation in which all homeowners—or all homeowners below a certain income threshold—receive a flat homeowner's tax credit that is independent of the size of the home and the size of the mortgage. This annual tax credit would go to any homeowner who occupied his or her home. The flat tax credit would appeal to people with smaller mortgages and it would reduce the benefit to borrow and buy big. For example, assume that a tax credit of $2,000 per year was available to all homeowners. This credit would be appealing to people whose marginal tax interest rate obligations were less than $66,000 per year and who had a marginal tax rate of less than 30 percent. If the prevailing interest rate were 6.6 percent, every homeowner who had a mortgage of less than $100,000 would be eligible for the tax credit. The tax credit could be made market specific so that higher tax credits were available in more expensive markets.

Even this flat tax policy would have the unfortunate side effect of encouraging people to leave cities that are dense with apartment buildings. If we wanted to encourage homeownership but limit the density-reducing effect of homeownership policies, it would be possible to slightly offset

the ownership tax credit with a density tax credit. For example, the ownership credit would be higher in places where density levels were higher. Renters could also receive a tax credit for living in high-density areas.

Alternatively, the tax credit could be tied to the area's cost of living instead of the density level. Giving a positive tax credit in places that are more expensive to live would reduce the tax incentive to leave those high-cost areas. Moreover, because housing is more expensive near the city center, this tax credit would reduce the incentive to flee the core.

Having a homeowner's tax credit and accurately taxing the costs of driving and low-density living may be the best solutions. If individuals paid for the full social cost of their energy use (and traffic congestion), then we would not need to create further distortions that would push people toward dense living environments. Better energy pricing would also induce more efficient energy usage along other margins.

Although these suggested proposals for policy change may be one economist's ideal, they will most likely not make any political headway. These proposals are too far from the status quo to have a chance of being implemented. Because I do not think it makes sense to let the perfect be the enemy of the good, I will suggest a policy path that is also difficult but less obviously impossible than a wholesale eradication of one of Washington's most popular policies.

This suggested path would move the United States toward a system in which homeownership were handled with a flat tax credit that creates no incentives to borrow or buy big. Moreover, after we adopted a flat credit, we could then reasonably ask whether homeownership actually delivers social capital that is worth $2,000 per year. That debate could have the positive effect of pushing legislators toward adopting policies that are more soundly grounded on real evidence about the magnitude of the externalities of homeownership.

Although reducing the cap on the home mortgage interest deduction would create a fairer, less biased system, it would do little to make life better for renters except allow them to pay a slightly smaller share of the federal tax burden. Indeed, reducing the incentive to own may increase the demand for rental units and push rental costs up, at least in the short run. Ideally, we would pass legislation to ease the rental burden to offset this effect.

In the previous section on rental housing, structure type, and local barriers to building, I argued that limiting new construction artificially boosts housing prices. Unfortunately, it is quite difficult for the federal government to meaningfully influence local land use decisions. One strategy, borrowed from the U.S. Department of Education's "Race to the Top," is to offer a reward to localities that make meaningful changes that will increase the supply of multifamily rental housing units. If a pot of aid, which could be used for local housing-related infrastructure, were tied to changes in the permitting environment, then this incentive could both serve as a demonstration project and provide a meaningful push toward new development.

One reasonable way to proceed would be to allocate a pot of money that would then be allocated after 48 months based on new units produced relative to historic trends and changes in the land use and permitting procedures. The allocations could be paid for with the increased tax revenues coming from changes to the home mortgage interest deduction or with the low-income housing

tax credit. Indeed, one way of structuring the program would just be to allocate LIHTC funds to localities based on past performance in the construction of multifamily units and changes in the permitting process.

Another approach would be for the U.S. Department of Housing and Urban Development (HUD) to undertake lawsuits against communities that excessively restrict new development. Recently, HUD successfully undertook a case in Westchester, New York, that led to some regulatory reform. The court system invariably involves a fair amount of randomness and unpredictability, but as evidenced by the Mount Laurel system,[10] it can achieve powerful results. Mount Laurel itself offers an attractive model in which exclusive communities essentially pay a price for their restrictiveness, which then promotes more affordable housing elsewhere—this serves as a tax on NIMBYism.[11]

Final Words

For too long, America has had privileged homeownership without fully internalizing the consequences of its programs. This policy's specific structure has had adverse consequences: we subsidize borrowing and thereby encourage people to over-leverage themselves to bet on the vicissitudes of the housing market. One adverse consequence, however, would occur in any pro-homeownership policy. Because ownership and structure are so tightly linked, promoting homeownership means promoting single-family detached homes at the expense of multiunit dwellings.

This subsidy pushes people away from cities and toward sprawling suburbs. This push has adverse consequences for the environment and the economy. We need to rethink our pro-homeownership stand and, at the very least, eliminate some of the most extreme features of the home mortgage interest tax deduction. Slowly lowering the cap on the interest deduction would be quite reasonable. At the same time, we should also consider policy decisions that discourage the tendency of many localities to ardently oppose new development of multiunit structures.

Appendix: Model

In this appendix, I examine the investment decisions of renters, owners, and landlords. I first focus on an investment that improves the physical condition of the house, which could be cleaning the gutters or fighting mold. I assume that this investment is noncontractible so that the renter cannot be paid for it by the owner or vice-versa. If the renter undertakes the maintenance action, there is a cost of T units of time and the cost of this in foregone after-tax earnings is (1-t)WT, where W is the tenant's wage and t is the tax rate, plus M, any cash costs.

A tenant will undertake this improvement investment if and only if the cost (1-t)WT is less than the consumption benefit of the investment during the resident's time in the house, denoted B, minus any increase in the rental payments charged by the landlord, which we denote ΔR. The

[10] In a 1975 court case, the Burlington County, New Jersey National Association for the Advancement of Colored People sued the Mount Laurel Township because the township's zoning ordinances restricted lower income people from finding affordable housing.

[11] The term NIMBYism is derived from the phrase, "Not in my back yard."

house is more attractive as a result of the maintenance, and the landlord certainly has an incentive to charge more. All costs, benefits, prices, and rents are assumed to be time zero discounted real values for algebraic simplicity.

A homeowner will undertake this investment if and only if the cost of the investment, again (1-t) WT + M, is greater than the benefit of the investment during the resident's time in the house, which I assume is still B, plus any increase in the final sales price of the house, which we denote ΔP. As such, owner-occupiers will engage in maintenance while renters will not, as long as

$$\Delta P + B > (1 - t)WT + M > B - \Delta R. \quad (1)$$

In some cases, a landlord may be willing to make the investment. We assume that the cost to the landlord is $\delta WT + M$, in before-tax dollars. The term δ is meant to capture the possibility that the landlord has access to either more efficient or less expensive labor. I also assume that there is a potential legal penalty, denoted K, for failing to engage in the maintenance, which reflects regulations that may apply to home maintenance. This legal penalty is presumably an expected value because maintenance will often be hard to establish in a court of law. Because the landlord will typically be taxed on all earnings and be able to deduct expenses, the landlord will undertake the action if and only if

$$\Delta P + \Delta R + K > \delta WT + M. \quad (2)$$

In this case, the maintenance is more likely to be performed if the rent impact, the price impact, or the legal penalty is high.

I assume that the unit experience N possible opportunities for maintenance. These opportunities have identical costs but differ in their benefits B, which equal $\hat{B} + \mu$, where μ is characterized by a density function $f(\mu)$. I assume that $\Delta P = \theta_P B$, and $\Delta R = \theta_R B$, where $\theta_R \leq 1$, and I calculate benefits by adding together the benefits received by the landlord and tenant in after-tax dollars. I further assume that, if the benefits of a maintenance action are positive for the landlord, then the landlord will take the maintenance action. The demand for homeownership will rise if the maintenance-related benefits of owning the home are larger relative to the benefits of renting it. With these assumptions, the following proposition follows.

Proposition 1:

(a) If $\frac{(1-t)WT+M}{1-\theta_R} < \frac{\delta WT+M-K}{\theta_P+\theta_R}$, then renters will engage in some maintenance themselves, and, in this case, owner-occupied units always have more maintenance than rental units.

(b) If $\frac{(1-t)WT+M}{1-\theta_R} > \frac{\delta WT+M-K}{\theta_P+\theta_R}$, then in rental units, the tenants will perform no maintenance and more maintenance will occur in rental units than in owner-occupied units if K is greater than some value K*, which is decreasing with θ_R, increasing with t and δ, falling with W and T if and only if $\delta > \frac{\theta_R+\theta_P}{1+\theta_P}(1 - t)$, and increasing with M if and only if $1 > \theta_R$.

(c) If K=0, then more maintenance will occur in owner-occupied units if and only if $\delta < (1 - t)\frac{(\theta_R+\theta_P)}{(1+\theta_P)} - \frac{(1-\theta_R)}{(1+\theta_P)}\frac{M}{WT}$.

Proof of Proposition 1:

If $\frac{\delta WT+M-K}{\theta_P+\theta_R} < \frac{(1-t)WT+M}{1-\theta_R}$, then some projects will be done by tenants, not by landlords. In that case, owner-occupation will always lead to more maintenance, because the condition for tenants engaging in maintenance is always more stringent than the condition for owner-occupiers engaging in maintenance.

If $\frac{\delta WT+M-K}{\theta_P+\theta_R} < \frac{(1-t)WT+M}{1-\theta_R}$, then any value of B that induces the tenant to engage in maintenance will also induce the landlord to engage in maintenance, and, by assumption, this means that only the landlord will invest in maintaining the house. Comparing the landlord's condition with the owner's condition, it follows that the landlord will invest when $\mu > \frac{\delta WT+M-K}{\theta_P+\theta_R} - \hat{B}$ and the owner-occupier will invest if $\mu > \frac{(1-t)WT+M}{1+\theta_P} - \hat{B}$. The landlord will invest more often if and only if $K > K* = \frac{(1-\theta_R)M+WT(\delta-(1-t)\theta_R+(\delta+t-1)\theta_P)}{1+\theta_P}$. The value of K* is clearly increasing with M if and only if $1 - \theta_R$, decreasing with θ_R, increasing with t and δ, and decreasing with W and T if and only if $\delta > \frac{\theta_R+\theta_P}{1+\theta_P}(1-t)$.

If K=0, then more maintenance in rental units will occur if and only if $\delta < (1-t)\frac{(\theta_R+\theta_P)}{(1+\theta_P)} - \frac{(1-\theta_R)}{(1+\theta_P)}\frac{M}{WT}$.

I expect tenants to pay rents equal to a constant Q plus the benefits that they would receive in the house from owning. The constant is meant to reflect flexibility or other benefits associated with renting. I assume that the landlord and owner-occupier discount the eventual sales price at an equal rate. To focus on the maintenance-related forces driving homeownership, I ignore local taxes and financing differences by assuming that everyone is paying up front. I assume that $\frac{(1-t)WT+M}{1-\theta_R} > \frac{\delta WT+M}{\theta_P+\theta_R} > \frac{(1-t)WT+M}{1+\theta_P}$ so that landlords perform maintenance on rental apartments and they do less maintenance than owners. In this case, it follows that—

Proposition 2:

There exists a value of Q, denoted Q*, at which owner-occupiers and landlords are willing to pay the same amount for a unit. Landlords are willing to pay more if Q>Q* and tenants are willing to pay more if Q<Q*. The value of Q* is rising with t and δ, falling with θ_R, and rising with $\hat{B}$ if $f\left(\frac{\delta WT+M}{\theta_P+\theta_R} - \hat{B}\right)$ is uniform and if $\delta > 1 - t$. The value of Q* is rising with M as long as $f\left(\frac{\delta WT+M}{\theta_P+\theta_R} - \hat{B}\right)$ and δ are not too much greater than 1-t.

Proof of Proposition 2:

I let B_0 reflect the baseline benefits from owning the home and P_0 refers to the sales price with no maintenance. Recall that all prices and benefits are net present values as of the time of purchase.

The expected total after-tax benefits to the homeownership net maintenance costs equal—

$$B_0 + P_0 + N\int_{\mu=\frac{(1-t)WT+M}{1+\theta_P}-\hat{B}}^{\infty}\left((\hat{B}+\mu)(1+\theta_P) - (1-t)WT - M\right)f(\mu)d\mu. \quad (3)$$

If the unit is rented then the expected sales price plus rental revenues net of maintenance costs will equal—

$$Q + B_0 + P_0 + N\int_{\mu=\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{B}}^{\infty}\left((\hat{B}+\mu)(1+\theta_P)-\delta WT-M\right)f(\mu)d\mu. \quad (4)$$

if $\frac{\delta WT+M}{\theta_P+\theta_R} > \frac{(1-t)WT+M}{1-\theta_R}$.

The value of Q at which landlords and homebuyers are willing to pay the same amount for a home equals N times $\int_{\mu=\frac{(1-t)WT+M}{1+\theta_P}-\hat{B}}^{\infty}\left((\hat{B}+\mu)(1+\theta_P)-(1-t)WT-M\right)f(\mu)d\mu - \int_{\mu=\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{B}}^{\infty}\left((\hat{B}+\mu)(1+\theta_P)-\delta WT-M\right)f(\mu)d\mu$. The derivative of this with respect to δ is $WT\left(1-F\left(\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{B}\right)\right)+\frac{WT}{\theta_P+\theta_R}f\left(\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{B}\right)\left(\frac{\delta WT+M}{\theta_P+\theta_R}(1+\theta_P)-\delta WT-M\right) > 0$. The derivative of this with respect to t is $WT\left(1-F\left(\frac{(1-t)WT+M}{1+\theta_P}-\hat{B}\right)\right) > 0$. The derivative of this with respect to θ_R is clearly negative.

The derivative of this with respect to $\hat{B}$ is $(1+\theta_p)\left(F\left(\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{B}\right)-F\left(\frac{(1-t)WT+M}{1+\theta_P}-\hat{B}\right)\right)+\frac{1-\theta_R}{(\theta_P+\theta_R)^2}(\delta WT+M)f\left(\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{E}\right)$. If f(.) is uniform, then this is positive if and only if $\delta > 1-t$. The derivative of this with respect to M is $-\left(F\left(\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{B}\right)-F\left(\frac{(1-t)WT+M}{1+\theta_P}-\hat{B}\right)\right)+\frac{1-\theta_R}{(\theta_P+\theta_R)^2}(\delta WT+M)f\left(\frac{\delta WT+M}{\theta_P+\theta_R}-\hat{B}\right)$. If f(.) is uniform, then this is positive if and only if $(1-t-\delta)WT+\frac{(1-\theta_R)^2}{(\theta_P+\theta_R)^2}(\delta WT+M) > 0$, which always holds true if δ is not too much larger than 1-t.

Proposition 2 gives us a natural measure of the demand for homeownership, the level of Q, which is the premium placed on ownership that is needed to induce landlords and owner-occupiers to pay the same amount for the same unit. Higher values of Q mean that homeownership will be relatively more common, because landlords will buy only when there is a higher premium for the liquidity premium of renting.

We focus instead on building-specific interventions, such as improving the roof, fixing the electrical system, or improving public spaces. Although it is possible for individual residents to undertake such interventions on their own, it is more natural that they coordinate in some fashion with a condominium or cooperative association. I assume that all costs are now paid for with a fee M and the Q = 0.

We assume that decisionmaking costs "d" units per person, so if there are U units in the association, the total decisionmaking cost is dU. This decisionmaking cost can reflect the time lost in attending meetings and debating in a condominium association. Moreover, I assume that everyone must pay this decisionmaking case. Alternatively, one could assume that the association delegates authority to a third-party manager, but then I would have to include the cost and possible waste of that manager whose incentives are unlikely to be perfectly aligned with the owners' incentives.

If there is a single landlord, that landlord pays *d* in decisionmaking cost. Landlords will engage in repair if and only if $(\theta_p + \theta_R)B > M$. A condominium association will engage in repair if and only if $(\theta_p + 1)B > M$, so repairs will always be more frequent with the condominium association. This implies the following proposition.

Proposition 3:

If d is large, then I denoted building size as U*, at which owner-occupiers and landlords receive the same benefits. For building sizes above U*, owner-occupancy is less attractive than renting and, for sizes below U*, owner-occupancy is more attractive. The value of U* is falling with d and θ_R and if $f(\mu)$ is uniform, U* is independent of $\hat{B}$ and rising with M.

Proof of Proposition 3:

Then the expected benefits from owning will equal

$$B_0 + P_0 - d + N\int_{\mu=\frac{M}{1+\theta_P}-\hat{B}}^{\infty}\left((\hat{B}+\mu)(1+\theta_P)-M\right)f(\mu)d\mu.$$

The expected benefit per unit of being a landlord is

$$B_0 + P_0 - d/U + N\int_{\mu=\frac{M}{\theta_R+\theta_P}-\hat{B}}^{\infty}\left((\hat{B}+\mu)(1+\theta_P)-M\right)f(\mu)d\mu.$$

The benefits will be equal if $\frac{(U-1)d}{U} = N\int_{\mu=\frac{M}{1+\theta_P}-\hat{B}}^{\frac{M}{\theta_R+\theta_P}-\hat{B}}\left((\hat{B}+\mu_{Ave})(1+\theta_P)-M\right)f(\mu)d\mu$. The right-hand side of the expression is always positive. The left-hand side equals zero if U=1 is increasing with U and goes to d if U goes to infinity. As long as $d > N\int_{\mu=\frac{M}{1+\theta_P}-\hat{B}}^{\frac{M}{\theta_R+\theta_P}-\hat{B}}\left((\hat{B}+\mu_{Ave})(1+\theta_P)-M\right)f(\mu)d\mu$, then there exists a value of U, denoted U*, at which the two values are equal. The value of U* is falling with d and rising with anything that causes $N\int_{\mu=\frac{M}{1+\theta_P}-\hat{B}}^{\frac{M}{\theta_R+\theta_P}-\hat{B}}\left((\hat{B}+\mu_{Ave})(1+\theta_P)-M\right)f(\mu)d\mu$ and falling with anything that causes that expression to fall. As a result, U* is falling with θ_R. The derivative of $N\int_{\mu=\frac{M}{1+\theta_P}-\hat{B}}^{\frac{M}{\theta_R+\theta_P}-\hat{B}}\left((\hat{B}+\mu_{Ave})(1+\theta_P)-M\right)f(\mu)d\mu$ with respect to $\hat{B}$ is N times $(1+\theta_P)\left(F\left(\frac{M}{\theta_R+\theta_P}-\hat{B}\right)-F\left(\frac{M}{1+\theta_P}-\hat{B}\right)\right)-\left(\frac{1-\theta_R}{\theta_R+\theta_P}\right)Mf\left(\frac{M}{\theta_R+\theta_P}-\hat{B}\right)$. If f(.) is uniform, then this equals zero. The derivative with respect to M equals $-\left(F\left(\frac{M}{\theta_R+\theta_P}-\hat{B}\right)-F\left(\frac{M}{1+\theta_P}-\hat{B}\right)\right)+\frac{1-\theta_R}{(\theta_R+\theta_P)^2}Mf\left(\frac{M}{\theta_R+\theta_P}-\hat{B}\right)$. If f(.) is uniform, then this is always positive.

Finally, I turn to social capital investments, which I define as investments that affect the quality of the neighborhood but not the neighborhood's structure. One way to view these investments is that they require time but not money and only the residents can make them. These investments may also create externalities. In general, equation (1) continues to hold and I should expect to see more investments from homeowners than from renters, both because homeowners internalize the benefits of future price increases and because they do not lose from increases in rents. These increased investments provide one justification for the correlations between homeownership and social capital found by DiPasquale and Glaeser (1999) and others.

Another question is whether structure or individual characteristics will connect with these investments. For example, it is natural to assume that both benefits and the costs of investment are a function of the size of the building. It might be easier to connect with others in large, dense structures, in which case T might be declining with U. Alternatively, the benefits of social capital might be lower or higher in denser areas. Social capital may be less valuable if people are more

connected to the streets in shorter buildings or it may be more valuable if there is more need for community associations to make blocks safer. I define the benefits of social capital as $\int_{\mu=\underline{\mu}}^{\infty}\left((\hat{B}+\mu)(1+\theta_P)-(1-t)WT\right)f(\mu)d\mu$, where $\underline{\mu}$ is the relevant cutoff level.

Proposition 4:

(a) Holding building structure constant, investment in social capital is always higher in owner-occupied than in rental properties, and if $f(\mu)$ is uniform, then the increased investment associated with owner-occupancy is rising with building size (U) if and only if the time costs of investing in social capital decline with building size ($0 > \frac{\partial T}{\partial U}$).

(b) If renters occupy larger buildings, then homeowners may invest less in social capital if the time costs of investing in social capital decline sufficiently with building size (that is, if $\frac{\partial T}{\partial U}$ is sufficiently negative).

Proof of Proposition 4:

The benefits of extra investment in social capital equals N times $\int_{\mu=\frac{(1-t)WT}{1+\theta_P}-\hat{B}}^{\frac{(1-t)WT}{1-\theta_R}-\hat{B}}\left((\hat{B}+\mu)(1+\theta_P)-(1-t)WT\right)f(\mu)d\mu$, which is always positive. The derivative of this with respect to U equals $\left(F\left(\frac{(1-t)WT}{1-\theta_R}-\hat{B}\right)-F\left(\frac{(1-t)WT}{1+\theta_P}-\hat{B}-\hat{\hat{B}}\right)\right)\left((1+\theta_P)\frac{\partial\hat{\hat{B}}}{\partial U}-(1-t)W\frac{\partial T}{\partial U}\right)+f\left(\frac{(1-t)WT}{1+\theta_P}-\hat{B}-\hat{\hat{B}}\right)\frac{(\theta_R+\theta_P)(1-t)WT}{1-\theta_R}\left(\frac{\partial T}{\partial U}\frac{(1-t)W}{1-\theta_R}-\frac{\partial\hat{\hat{B}}}{\partial U}\right)$. If f(.) is uniform, then this becomes $\frac{(1+\theta_P)^2-(1-\theta_R)^2}{(1+\theta_P)(1-\theta_R)^2}\left((1-t)W\right)^2T\frac{\partial T}{\partial U}$ times the density of μ, which is positive if and only if $\frac{\partial T}{\partial U}$ is positive.

Let U_R define the building size for renters and U_P define the building size for owners. These then imply different values of $\hat{B}$ and T, for renters and owners, which I denote as T_R and $\hat{B}_R$ for renters and T_P and $\hat{B}_P$ for owners. Owners will invest more than renters if and only if $\frac{(1-t)WT_R}{1-\theta_R}-\hat{B}_R>\frac{(1-t)WT_P}{1+\theta_P}-\hat{B}_P$ or $\frac{T_R}{1-\theta_R}-\frac{T_P}{1+\theta_P}>\frac{\hat{B}_R-\hat{B}_P}{(1-t)W}$. This condition can plainly fail to hold if T_P is sufficiently high relative to T_R.

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Author

Edward L. Glaeser is the Director of the Taubman Center for State and Local Government and the Rappaport Institute for Greater Boston, and he is the Fred and Eleanor Glimp Professor of Economics at Harvard University and a faculty research fellow at the National Bureau of Economic Research.

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Thoughts on Rental Housing and Rental Housing Assistance

Richard K. Green
University of Southern California

Abstract

The United States has long exhibited enthusiasm for homeownership. The converse of this is that it has tended to neglect rental housing. This article seeks to do the following: (1) explain why rental housing is desirable; (2) lay out the policies that favor owner-occupied housing; (3) discuss current subsidy programs for rental housing, with particular emphasis on programs that are not simply legacies of past policy; and (4) examine how these programs might be improved or reformed. It argues that in a second-best world of restrictive zoning and preferences for ownership, rental subsidies may be justified on both equity and efficiency grounds.

Introduction

If anything shows how research and policy have neglected rental housing, it is a search of the words "rental housing" on scholar.google.com. Of the 10 most cited studies on this issue, the youngest is 10 years old, 5 are from the 1980s, and 4 are from the 1970s. And it is not as if more recent papers will catch up soon—the 10th most cited paper has been cited only 34 times.

Yet rental housing is a big deal. The 2007 American Housing Survey (AHS) shows that 35 million households lived in rental housing in that year, housing 81 million people. The events of the past 2 years have made renter housing more important, because many households that were foreclosed upon have been forced to move into rental housing. For mobile people who do not want to bear the fixed costs of owning and busy people who do not want to bear the management cost of owning, rental housing is an important option.

The neglect of rental housing is the natural product of America's obsession with owner-occupied housing. This obsession goes back at least as far as de Tocqueville (de Tocqueville, 1835: 231):

> Nations are less disposed to make revolutions in proportion as personal property is augmented and distributed amongst them, and as the number of those possessing it increases.

The reverse of the American embrace of owner housing has been hostility toward rental housing in general and apartments in particular.

This article argues that in a second-best world, one in which the federal government provides substantial benefits to owners and local zoning is often hostile to renters, rental subsidies may be appropriate on both equity and efficiency grounds.

Not all rental subsidies are created equal, however. Rent control is inefficient and often inequitable. Tax credits may encourage low-rent housing in places it is least needed and may be very "leaky"; that is, a large share of the subsidy does not find its way to renters. The Section 8 Housing Choice Voucher Program (vouchers) provides the most promising form of rental assistance, but, because it is not an entitlement, its may produce perverse results.

This article seeks to do the following: (1) explain why rental housing is desirable; (2) lay out the policies that favor owner-occupied housing; (3) discuss current subsidy programs for rental housing, with a particular emphasis on programs that are not simply legacies of past policy; and (4) examine how these programs might be improved or reformed.

Why Rental Housing Is Desirable

Rental housing can be better for some households than owner-occupied housing for a few reasons. Rental housing—

- Is compatible with labor mobility.
- Allows for households that wish to invest in something other than housing to do so.
- Generally allows for the provision of safe, sanitary housing while reducing the risk and perhaps the cash-flow cost of such housing to dwellers.

This section discusses each of these points briefly. When making a decision between owning and renting, a household might perform a financial calculation regarding which form of tenure minimizes housing costs. Although housing costs are generally addressed in terms of cash-flow costs (discussed later in the article), they also need to be addressed in terms of fixed costs—the fixed costs involved in purchasing a home are inevitably higher than they are for renting.

The reason for this disparity is the nature of the transaction: owners need to know their tenure is secure in perpetuity (or something close to it), and lenders that finance owner-occupied housing need to perform due diligence to make sure their loans are well collateralized. This due diligence imposes fixed costs in the forms of downpayment, title insurance, and loan origination costs on owners that do not exist for renters. The buyer-seller transaction is also more likely to go through a broker than is a landlord-renter transaction.[1] Moreover, homeowners bear these types of fixed costs both when purchasing and selling a house. These costs produce a friction that is much larger than in the rental market.[2]

[1] Brokers are usually involved in commercial real estate leases, but are less involved in apartment/house leases.

[2] A landlord must perform due diligence as well, but not to the same degree as a lender or a title insurance company. If a landlord makes a mistake, he or she loses a few months' rent; if a lender or title insurance company makes a mistake, their potential losses are considerably larger.

Homeownership is often sold as a method that enables households—particularly low-income households—to accumulate wealth. This argument has some appeal, because an amortizing mortgage allows households to save and consume simultaneously.

Ownership, however, is surely not the only mechanism available for the poor to begin wealth accumulation. To the extent homebuyers must place equity into a house they will purchase (and loans with 100-percent loan-to-value ratios will be absent for awhile), they will have fewer savings to invest elsewhere. This absence of saving for other investment is not necessarily optimal for either households or the broader economy. Scholars such as Mills (1987), Hendershott (1997), and Taylor (1998) have argued that capital that has flowed out of plant and equipment and into housing has cost the United States productivity and, therefore, Gross Domestic Product.

Finally, regarding cash-flow affordability, consider that owners and renters both pay rent—the difference for renters is that the amount they pay is transparent, whereas, for owners, it is not; hence, for owners, it is called "imputed rent." In equilibrium, however, the marginal renter must pay the same rent for a house of a particular quality as the marginal owner. This equilibrium condition helps explain why the cash-flow cost of renting is likely lower for renters than it is for owners.

Consider two dwelling units that are identical, except for the tenure of their residents. From the perspective of the landlord, she must earn a total return that is equal to the opportunity cost of her capital (OCC), or the amount she could earn on an investment with comparable risk to housing. Put aside taxes for a moment, and assume that rents increase each year. In equilibrium, the marginal owner's cost should be indifferent between the cost of owning and renting.

Gross rent is the cash flow expense to the tenant; the sum of OCC and operating expenses is the cash flow expense to the landlord. If rents are expected to grow (as they should in a developing economy), the cash flow expense of owning at the beginning of an ownership period is greater than the cash flow expense of renting. As rents rise, the relationship can reverse, but, for those facing consumption constraints, the cost of owning in early years can be greater than the cost of renting. For owners with large mortgages, the cash flow expense takes the form of interest payments; for owners with large amounts of home equity, the cash flow expense is the foregone income from an investment other than housing.

For a poor person—and in particular for a poor young person who would need to take on a large mortgage to buy a house—who is consumption constrained, the ability to consume housing with less cash flow in a year could be very desirable. For an elderly, low-income person, converting home equity into an alternative investment can make the ability to consume rental housing quite desirable. There can be no doubt that such households are better off (or at least not worse off) when the option is available.

Policies Favor Owner Housing and Discourage the Development of Rental Housing

Despite the fact that rental housing can advance desirable policy goals, the United States has a pervasive policy bias toward owning. One possible consequence of such policy is that the market alone will not provide adequate levels of rental units at sufficiently low prices. Although rental subsidies might create distortions in an otherwise first-best world, they may improve welfare in a second-best world (it is also unlikely that the distortions that cause capital to flow to owner-occupied housing will be removed).

Policies that are beneficial to owner-occupied housing (or hostile to rental housing) may be divided into three types: (1) zoning policy (which is implemented by local governments), (2) tax policy (some of which is implemented at the local level, some of which is implemented at the state level, and some of which is implemented at the federal level), and (3) financial policy, which is implemented at the federal level.

Zoning Policy

Zoning came into existence for a very sensible policy purpose: to eliminate (or at least reduce) the negative effects—or externalities—that one type of land use might have on another. The iconic example is the oil refinery that wishes to locate next to a neighborhood of houses: the private benefit to the refinery might be large, but the cost to the adjoining neighborhood would also be high—likely higher. Such a use is sometimes referred to as a "nuisance use."

The benefit of zoning is not only that it prevents a nuisance use, but also that it reassures people that they are avoiding the risk of a nuisance use. Hence, in principle, zoning is sensible policy.

Two metrics measure in theory whether zoning is optimal. First, if zoning exists, such that land values are maximized (that is, that no change in zoning would increase total property values), then zoning is optimal. Alas, knowing whether values are at their maximum possible value at a given level of zoning requires the knowledge of the full set of values that would be produced given a full set of zoning options, which is not possible.

A short note by Colwell and Dehring (1999) implies a somewhat better metric. Although the model contains many strong assumptions, it offers some insight. The model has a market with two types of land use, one of which produces negative externalities (commercial) and one of which does not (residential). In the absence of zoning, when the two types of land uses abut each other, their values will be equal—the value of the residential property will be encumbered by the commercial property, and equilibrium requires them to be equal at their boundary. As residential uses become more distant from commercial uses, the negative effect of the commercial uses on residential uses becomes smaller. On the other hand, because commercial property is not affected by residential property, its value remains the same everywhere (this conclusion assumes that views, topography, and the distance from the central business district, etc., were considered). Consequently, residential land that is not next to commercial land is more valuable than commercial land. Because commercial land is relatively inexpensive, commercial uses tend to get too much investment, and residential uses too little. Optimal zoning would restrict commercial development until the value of

commercial land is just equal to the value of residential property that is sufficiently far from commercial activity that its value is not affected by it. A test of optimal zoning, then, is whether property values away from boundaries between uses are the same or different. If commercial uses are restricted to the point that commercial values become higher than residential values, zoning has gone too far; it prevents the optimal development of commercial uses.

Communities seem to have a presumption that apartments have a negative effect on single-family houses—this presumption would explain why apartments are almost always subject to more restrictive zoning than single-family houses. Yet no compelling evidence indicates that apartments produce negative externalities.[3] Certainly, apartments create a smaller fiscal burden for cities, because only about 15 percent of apartment dwellers in buildings with more than 50 units have children, whereas about 37 percent of dwellers in detached single-family homes have children.[4]

The question of whether communities restrict apartments too much[5] is not a settled question, although a previous HUD report essentially argues that it is (Ashey and Kean, 1991). It is a question worth revisiting, and HUD could survey whether apartment land values are more or less equal to single-family property values across a number of U.S. cities.

If communities are restricting apartment construction beyond what is socially justified, the effect of zoning policy is to levy a tax on apartment dwellers. According to the 2007 AHS, the median income of those living in detached houses is more than twice the median income of those living in large apartment buildings. Equity suggests that low-income apartment dwellers should receive some sort of subsidy. Too much zoning also leads to a shortage of rental units, which is economically inefficient.

The alternative is to induce municipalities to loosen up zoning codes; the politics of such actions are problematic. Although economists are suspicious of subsidies in general, in a second-best world, undoing the effects of one distortion by introducing another may improve social welfare.

Tax Policy

Nearly every country in the world uses tax policy to encourage homeownership. The method is passive: equity owners of housing earn imputed rent, and such rent is rarely taxed. The Congressional Budget Office (CBO) includes nontaxation of net imputed rent as a tax expenditure.

One could argue that such treatment (nontaxation) makes sense from the standpoints of transparency and simplicity. Taxing imputed rent would be difficult to explain to taxpayers, and so it is not transparent. As for simplicity, taxes are best levied on things that are easily measured. The difficulty that the Bureau of Labor Statistics has with measuring the owner-housing component of Consumer Price Index suggests that imputed rent is NOT easily measured. Indeed, the fact that before 2007

[3] Although apartments are not synonymous with rental housing, multifamily properties have a higher share of the rental market than do single-family homes. According to the 2008 AHS, 80 percent of units in buildings with more than 50 units had renters and 86 percent of detached single-family units had owners.

[4] Children are not negative externalities, but the short-term cost of educating them is.

[5] Communities also use ordinances such as occupancy codes to prevent nonrelated people from renting together, which is effectively a restriction on rental housing.

the CBO estimate of the tax expenditure on imputed rent was smaller than the tax expenditure on the home mortgage interest tax deduction (additional information follows) shows how difficult such a measurement is. Until 2007, the value of home equity in the United States was higher than the value of mortgage debt outstanding (Federal Reserve, 2011), and returns to equity should be higher than returns to debt. The implication is that imputed rent should have been larger than mortgage interest.[6]

It is easy to understand why imputed rent is not taxed, but the fact that it is not taxed makes the mortgage interest deduction something of a puzzle.[7] Many English-speaking countries (Canada, Australia, and the United Kingdom) do not have policies that allow homeowners to deduct mortgage interest. Moreover, the idea that mortgage interest deduction was designed to spur homeownership is something of a myth: it is actually a residual of the 1913 Income Tax Code, which allowed all consumer interest to be deductible. The predecessor proposals to the Tax Reform Act of 1986 would have eliminated the deductibility of all consumer interest. Brilliant lobbying on the parts of the National Association of REALTORS®, the National Association of Home Builders, and the Mortgage Bankers Association convinced Congress that the mortgage interest deduction was crucial to maintaining and increasing the homeownership rate in the United States (Birnbaum and Murray, 1987).

Little, if any, evidence suggests that this claim is correct. The countries listed previously that lack a mortgage interest deduction policy have homeownership rates similar to that of the United States, which is 66.4 percent: in Australia it is 71 percent, in Canada it is 65 percent, and in the United Kingdom it is 69 percent (Proxenos, 2002). Some simulations (Green and Reschovsky, 1999) imply that the ownership rate would fall by a miniscule amount if the mortgage interest deduction were eliminated. Another simulation (Green and Vandell, 1999) shows that a targeted tax credit would be a far more effective method for encouraging homeownership than the current mortgage interest deduction.[8]

The largest problem with the mortgage interest deduction is that it provides virtually no benefits to below-median-income households. Such households, even when they own, may not take the mortgage interest deduction at all because, for them, the standard deduction will be more valuable than itemized deductions, including one for mortgage interest.[9] And even if they do itemize, the marginal benefit of the deduction, relative to the standard deduction, will be quite small, meaning that it will provide little incentive for ownership. At the same time, the deduction provides disproportionately large tax relief to those at the upper end of the income distribution (Follain and Ling, 1991). Finally, the mortgage interest deduction encourages households to take on debt. Canadians

[6] One could calculate imputed rent by calculating the total value of home equity and multiplying that total by some interest rate. But it is difficult to know the "correct" rate; as such, a rate would be a function of both expected duration and risk. Both of these factors could vary substantially across homeowners.

[7] Landlords can deduct mortgage interest, but they also pay tax on the rental income they receive.

[8] Classic papers on the effect of the mortgage interest deduction include Poterba (1992), Rosen (1979), and Rosen and Rosen (1980). More recent papers include Glaeser and Shapiro (2003), Green and Reschovsky (1999), and Green and Vandell (1999).

[9] Rosen and Rosen (1980) wrote their paper at a time when the standard deduction was much smaller, so that the mortgage interest deduction was more valuable to lower income households.

and Australians are just as likely to be homeowners as Americans, and they use mortgages, but they pay their mortgage balances more quickly, meaning their households are less leveraged and, therefore, less vulnerable. Only a limited number of economists (Woodward and Weicher, 1989) have kind things to say about the mortgage interest deduction. They argue that an elimination of the deduction gives an advantage to those who can buy houses with cash (presumably higher income people) relative to those who need mortgage financing.

The mortgage interest deduction may also make rents more expensive than they otherwise would be. Bid rent theory implies that the bidder who most values the land will set the land prices. Consider two bidders: one has the benefit of the mortgage interest deduction, and another does not (that is, a renter). Because the bidder who uses the deduction faces a lower after-tax cost of capital, she will outbid the renter, thus leaving the renter with the options of paying the high price set by the subsidized bidder, or settling for an inferior location (which might have higher commuting costs). Consequently, the total cost of renting per unit of housing quality is driven upward by the mortgage interest deduction.

Despite the fact that many policy analysts have issues with the mortgage interest deduction, the last time it was threatened was during the debate about the Tax Reform Act of 1986. Gyourko and Sinai (2003) estimated the net benefits of the mortgage interest deduction by congressional district. On the one hand, they found that if the proceeds from the mortgage interest deduction were returned as lump sum payments to taxpayers, most districts would benefit from the elimination of the mortgage interest deduction, but by a small amount. On the other hand, the districts that benefit from the mortgage interest deduction would lose large amounts if it were eliminated. When a policy's benefits are concentrated and costs are diffused, it will usually have substantial lobbying support.

As with zoning, the mortgage interest deduction leads to a suboptimal allocation of rental housing, and makes rental housing more expensive. It may be reasonable for the federal government to offset these negative effects with subsidies.

Financial Policy

For many years, owner-occupied housing received preferential treatment in finance markets through two mechanisms: Government Sponsored Enterprises (GSEs) and bank capital requirements.

Government either directly or implicitly backed four housing finance entities: Ginnie Mae, a government agency that securitized Federal Housing Administration (FHA) and Veterans Administration mortgages; Fannie Mae and Freddie Mac, private enterprises whose investors believed had the backing of government, and the Federal Home Loan Bank System, which could make low-cost advances to member banks for the purpose of funding mortgages. This article does not extensively discuss GSEs, except to note that for many years these programs drove down the cost of capital required for owner-occupied housing.

Fannie Mae, Freddie Mac, and FHA also would purchase multifamily loans, but, until recently, these businesses were quite small, especially for Freddie Mac and FHA. Freddie Mac nearly got out of the multifamily business altogether when its book of multifamily loans performed very badly in the early part of the 2000s. It is likely that the Affordable Housing Goals that arose from the Federal

Housing Enterprises Financial Safety and Soundness Act of 1992 did encourage Freddie Mac to start doing more multifamily lending recently, but Fannie Mae and Freddie Mac have long had a far larger footprint in the single-family mortgage business than in the multifamily mortgage business.[10]

The capital requirements of banks were subtler. When a bank bought and held a mortgage-backed security (MBS) from Fannie Mae or Freddie Mac, the security carried a risk weight of .2, which meant that well-capitalized banks needed to put only 1.6-percent capital behind a GSE MBS. Whole apartment loans, on the other hand, generally carried risk weights of between 50 and 100 percent, meaning that well-capitalized banks needed to put 4- to 8-percent capital against such loans. Although Fannie Mae and Freddie Mac could securitize apartment loans that would also receive favorable treatment, their propensity to do so was quite small. According to the Federal Housing Finance Agency's *Annual Report to Congress*, in 2009 Fannie Mae had almost $2.4 trillion in single-family MBS outstanding but only $47 billion in multifamily MBS. Freddie Mac had $1.47 trillion in single-family MBS and $15 billion in multifamily MBS (FHFA, 2010).

The capital standards, which arose from Basil I[11] seemed reasonable at the time, because, over the long haul, single-family mortgages, in general, and GSE mortgages, in particular, performed quite well. Historically, however, single-family mortgages have performed quite poorly in some regions of the country (the Midwest in the late 1970s, Texas in the mid-to-late 1980s, New England in the late 1980s and early 1990s, and California in the early to middle 1990s). To some extent, Fannie Mae and Freddie Mac could manage regional downturns through geographical diversification, but these regional problems undermined the idea that home mortgages were inherently safe instruments.

Bank capital is expensive, so the fact that banks needed to put less subsidy behind GSE MBS (which overwhelmingly favored the single-family sector) once again placed apartments at a disadvantage relative to detached single-family homes.

How Renters Are Currently Subsidized

Assuming there are compelling reasons on equity and efficiency grounds to subsidize rental housing, it is important to do so in the most efficient and equitable manner possible. Void of the consideration of the proper level of rental subsidy, it is almost indisputably the case that many of the U.S. rental subsidy programs are neither efficient nor equitable.

Currently, renters are mainly subsidized via federal programs in four ways[12]: (1) the Section 42 Low-Income Housing Tax Credit Program (Tax Credits; LIHTC), (2) the tenant-based Section 8 Housing Choice Voucher Program (vouchers), (3) Public Housing, and (4) other project-based housing assistance, including project-based Section 8. Exhibit 1 depicts the relative size of such programs from 1941 to the present. This article will also not discuss Public Housing and project-based Section 8

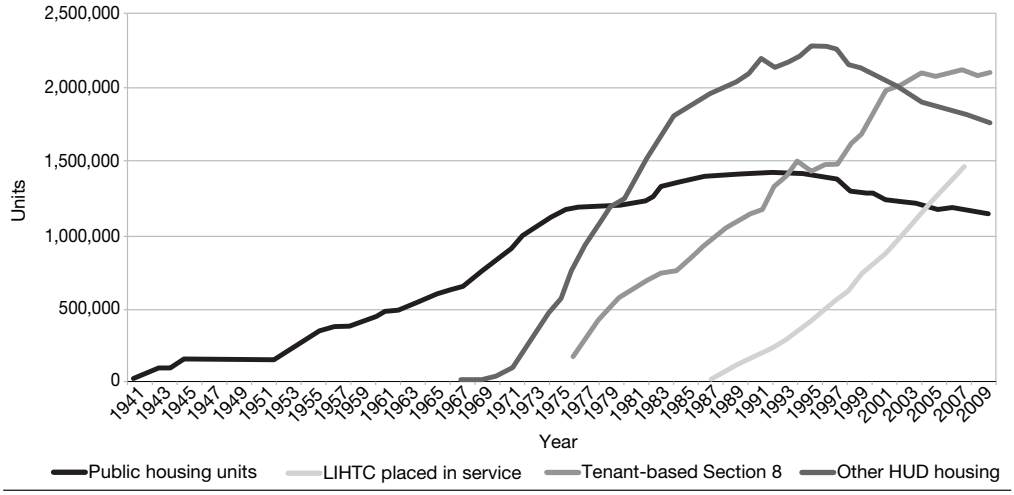
[10] Except in the aftermath of the financial crisis, at which point Fannie Mae, Freddie Mac, and FHA dominated both single-family and multifamily lending.

[11] Basel I established international standards for defining well and adequately capitalized banks.

[12] A small number of large cities, most notably New York, Los Angeles, and San Francisco, subsidize renters with rent control. Although rent control is not ubiquitous in the United States, it does have a profound effect on rental markets in the places where it exists. For a discussion, see Green and Malpezzi (2003).

Exhibit 1

Change Over Time in Number of Rental Housing Units/Households Assisted



LIHTC = Low-Income Housing Tax Credit.

Source: Ingrid Gould Ellen, New York University Furman Center for Real Estate and Urban Policy

housing, because it has been some time since new units have been produced using those programs, and it does not seem likely that any political appetite exists to resume construction through such programs. The LIHTC program, although likely more efficient than past supply subsidy programs, arguably still retains some of the issues endemic to such programs. Vouchers have their own problems (discussed later in the article) but are also statistically the most effective method for providing rental subsidy.

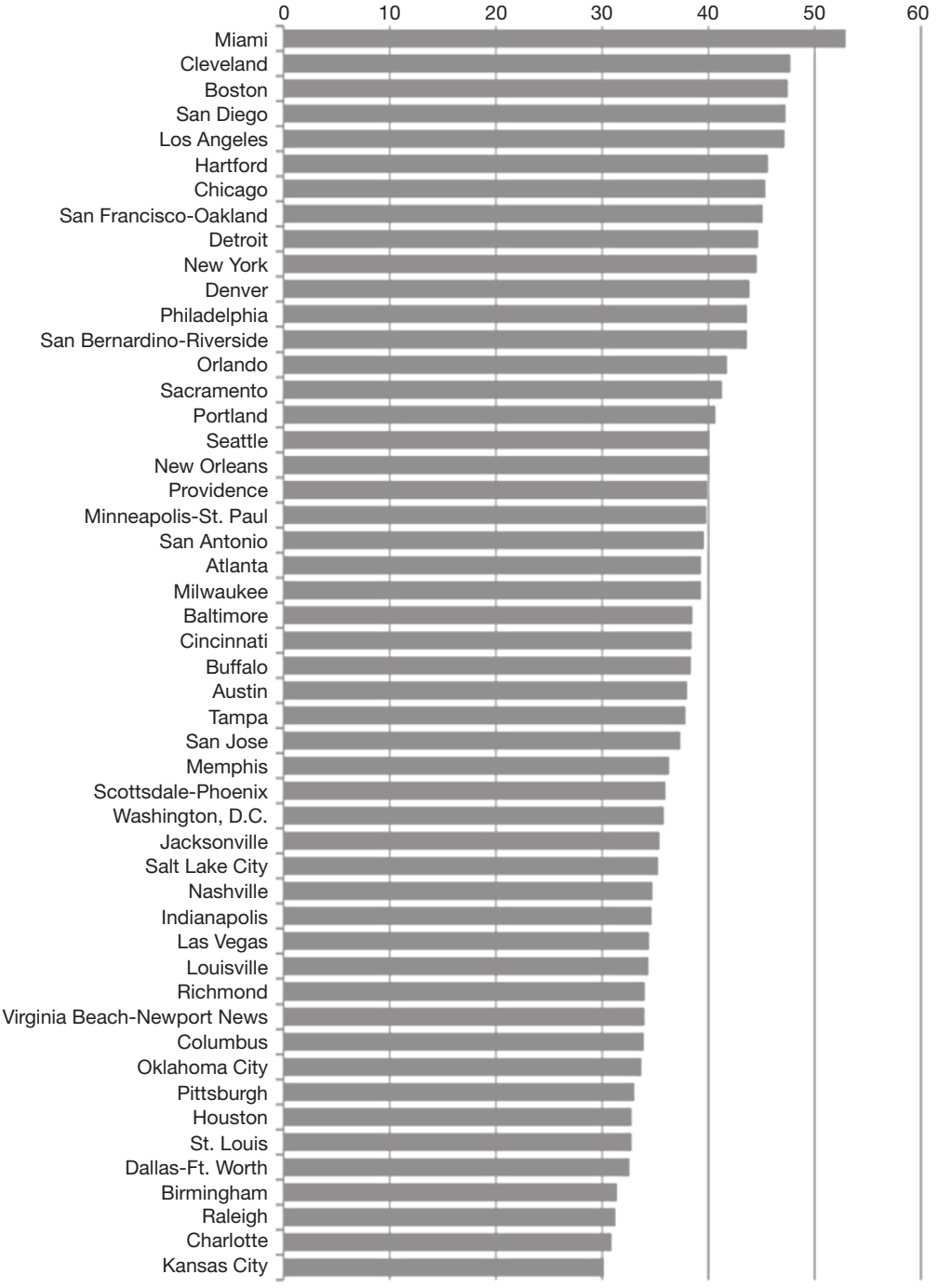
Section 42 Low-Income Housing Tax Credit Program

A classic debate in housing policy is whether demand subsidies are better than supply subsidies for housing. The crux of the debate is between what some call the economist view—that the best way to help the poor is to provide direct income subsidies—and the planner/lawyer view—that the government and nonprofits can deliver housing at a lower cost because they do not retain profits. Some analysts, including Ellen et al. (2007), have also argued that place-based investment programs can have positive spillover benefits, at least in New York City. The planner/lawyer expresses concern that demand subsidies will ultimately flow through to landlords and, therefore, do little to actually help the poor.

Advocates of supply programs argue that, in the absence of supply subsidies, it is never in the interest of developers to build low-rent housing, in part because rents do not rise as rapidly in low-rent buildings. They also note that, because construction costs in many cities are high, affordable rents (generally defined as 30 percent of income) are insufficient for new affordable construction to be feasible in the absence of subsidy. There can be no doubt that, in many cities, unsubsidized rents are not affordable for large numbers of households. Exhibit 2 uses American Community Survey (ACS) data to compare rents at the 25th percentile with household incomes at the 25th percentile.

Exhibit 2

Ratio of 25th Percentile Gross Rent to 25th Percentile Household Income for Renters, 2008



Source: American Community Survey

Among the 50 largest U.S. metropolitan areas, rents at the 25th percentile are always more than 30 percent of income at the 25th percentile. The market alone does not do an adequate job of providing affordable housing.

On the other hand, many analysts (including Malpezzi, 2002) argue that new construction programs for subsidized housing crowd out existing affordable housing. The evidence on whether this is true is actually murky—although empirical tests cannot find evidence that supply programs increase the stock of affordable housing, the lack of a finding may be the result of the design of such tests.[13]

Supply subsidies have essentially disappeared from American housing policy, with the exception of the Section 42 LIHTC Program (revisit exhibit 1, which shows how the number of public housing units and project-based Section 8 units are declining). Simple simulations may reveal whether the incidence of the program benefits renters or landlords.

The structure of the LIHTC Program essentially offers developers a trade: in exchange for agreeing to limit rents to 30 percent of the 60 percent of Area Median Income (AMI), developers receive a tax credit. If the developers build "ground up" new housing, the credit is equal to 9 percent of qualified construction costs; if the developer rehabilitates an existing property, the credit is equal to 4 percent of qualified construction costs.

A comparison of the value of the tax credit with the value of foregone rents will help explain the nature of the subsidy. An example will clarify. Assume the typical two-bedroom unit is 850 square feet, investors discount the value of tax credits with a 7-percent discount rate, construction costs are $150 per square foot,[14] qualified costs are 80 percent of construction costs, market rent is $900 per month and AMI is $50,000. If developers of LIHTC properties agree to charge no more than 30 percent of 60 percent of AMI, their renters will be charged no more than $9,000 per year in rent. Thus, the federal government helps renters get a subsidy of $1,800 per year in rent for 30 years in exchange for giving up $9,180 (850*120*.09) in tax revenue per year for 10 years.

Assume the real discount rate to the government and renters both is 3 percent. The present value of the rent savings is $35,280. The present value of revenue cost to the government is $78,307. Hence, in this example, less than one-half of the subsidy from the government is going to help the renter.

The fraction of the government subsidy that goes to renters depends on the size of the discount a renter receives. This discount varies considerably from one market to the next. As a crude measure of the size of the rent discount for markets, ACS data are used to compare median rent to 30 percent of 60 percent of AMI by county. (Note: These data are a rough cut at the issue—rents are actually set based on AMIs.)

The ACS contains information on median income and median rents in 1,889 counties and municipalities in the 50 United States, the District of Columbia, and Puerto Rico.[15] The first thing worth noting is that, in 1,691 counties and municipalities, median rent is less than 30 percent of 60 percent

[13] To use statistical language, just because one cannot reject a null hypothesis does not mean that the null hypothesis is true.

[14] This is roughly the cost of construction in Madison, Wisconsin, for a one- to three-story apartment building according to RS Means.

[15] The ACS does not have these data for counties with small populations.

of median income. Unless the median rental unit in these counties is in unacceptably poor condition (and, according to the AHS, only 3 percent of rental housing in the United States suffers from "severe" physical problems and 7 percent suffers from "moderate" physical problems)—these data reveal that, for all but around 200 counties with these data, the LIHTC Program is superfluous—because sufficient numbers of "affordable" units are available, based on the program's own definition of affordability.

But, of course, counties are not the same as people. Many of the 20 largest counties in the United States have median rents higher than 30 percent of 60 percent of AMI, as shown in exhibit 3.

Exhibit 3

Tax Credit Gap for the 20 Largest U.S. Counties

	Population	Difference Between 30 Percent of 60 Percent of Median County Income and Median Rent ($)
Los Angeles County, CA	9,848,011	– 1,801
Cook County, IL	5,287,037	No gap
Harris County, TX	4,070,989	No gap
Maricopa County, AZ	4,023,132	No gap
San Diego County, CA	3,053,793	– 1,033
Orange County, CA	3,026,786	– 1,520
Kings County, NY	2,567,098	– 2,825
Miami-Dade County, FL	2,500,625	– 2,613
Dallas County, TX	2,451,730	– 64
Queens County, NY	2,306,712	– 2,410
Riverside County, CA	2,125,440	– 1,565
San Bernardino County, CA	2,017,673	– 1,381
Wayne County, MI	1,925,848	No gap
King County, WA	1,916,441	No gap
Clark County, NV	1,902,834	– 836
Tarrant County, TX	1,789,900	No gap
Santa Clara County, CA	1,784,642	No gap
Broward County, FL	1,766,476	– 1,746
Bexar County, TX	1,651,448	No gap
New York County, NY	1,629,054	– 323

Exhibit 3 shows that, in 60 percent of the largest counties, a household at 60 percent of county median income cannot afford the median rental unit (although, in Dallas County, it is very close). This is not to say that Dallas County does not have affordability problems. Exhibit 1 makes clear that the top 50 metropolitan statistical areas fail to deliver affordable market rent housing to the bottom income quartile of renters. It does suggest, however, that the method the program uses to define housing need has serious problems.

The affordability issues are most concentrated in New York City, California, and Florida; affordability issues plague these states in smaller cities, too. The fact that all areas are allocated credits based on population suggests that the Section 42 subsidy is not well targeted. The fact that affordable rents are defined as 60 percent of median income also leads to inappropriate targets.

The worst case county among the 20 counties is Kings County, New York (that is, Brooklyn). A household at 60 percent of county income would need a subsidy of $2,825 per year to "afford" the

median rent. Hard costs for apartment construction in New York City outside of Manhattan are about $200 per square foot (Scanlon, 2008). This assumption qualifies a cost of $170,000 for an 850-square-foot apartment. At a real discount rate of 3 percent, the cost of the subsidy from the government is around $130,000 and the benefit to renters is around $55,000.[16]

Median rents and median incomes are just not sufficient methods for determining housing needs—one needs to investigate how the distributions of rents and incomes vary from one metropolitan area to the next. It may be the case that 30 percent of 60 percent of AMI produces a rent that is not affordable for many, many households. It also may be the case that 30 percent of 60 percent of median rent may be higher than market rent (consider exhibit 3). If the federal government wishes the Section 42 program to help more people more effectively, it needs to reconsider how it allocates tax credits across states and also to think more carefully about entire distributions of rents and incomes, instead of applying arbitrary ratios to medians.

Section 8 Vouchers

The Section 8 Housing Choice Voucher Program provides for two types of vouchers: Section 8 project-based and Section 8 tenant-based vouchers. The larger program is the Section 8 tenant-based program, which has portable vouchers. Section 8 tenant-based vouchers currently serve about 1.2 million households nationally; the project-based Section 8 program serves around 30,000 households. The public housing authorities (PHAs) that administer Section 8 determine recipient qualification. Recipients can earn no more than 50 percent of AMI, so the program is targeted to "very" low-income renters. Renters receive a voucher equal to the difference between 30 percent of their income (which is what they are expected to pay for housing) and Fair Market Rent, which is defined as the 40th percentile of rent for an area. PHAs are also required to allocate three-fourths of their vouchers to households at the 30th percentile of the rental distribution.

Section 8 is not an entitlement. According to U.S. census data, roughly one-fourth of U.S. households (or 27 million households), earn less than $25,000 per year, which is about one-half of the U.S. median household income (DeNavas-Walt, Proctor, and Smith, 2009). Yet, the best evidence suggests that Section 8 is an effective method for delivering housing subsidy—it is more efficient and equitable than any construction program (Green and Malpezzi, 2003).

The most recent work on the housing voucher program has focused more on its effect on labor markets than its effectiveness as a housing program per se. On the one hand, vouchers should outperform other types of housing subsidy regarding labor markets, because they allow for mobility, at least within metropolitan areas. On the other hand, as household income rises, the value of vouchers gets clawed back, until, ultimately, households lose their eligibility altogether. Because households are required to pay 30 percent of their gross income in rents, those who receive vouchers effectively pay a 30-percent marginal tax rate on income.[17]

[16] The reality is that the share of the subsidy going to renters in Kings County is smaller, because AMI for metropolitan New York is $77,000, whereas, for Kings County, it is a shade under $50,000. Therefore, 30 percent of 60 percent of AMI—the point at which rents are affordable—is higher, and so the subsidy to renters is lower.

[17] Clawbacks are a problem with all rental subsidy programs.

Studies of the labor market effect of vouchers have shown mixed outcomes, which is informative: they suggest in total that the portability feature of vouchers does not, on its own, solve labor market problems for the poor, but also that the marginal tax rate does not seem to strongly discourage labor participation either. Ludwig, Duncan, and Pinkston (2005: 131) found that—

> …providing low-income families living in public housing units with private-market rental subsidies that can only be redeemed in very low-poverty neighborhoods reduces rates of welfare use by around 15 percent. Most of this reduction appears to be explained by differences in welfare-to-work transitions. [But they also found] that providing families with unrestricted housing vouchers has little effect on economic outcomes beyond the first year.

All housing assistance programs produce implicitly high marginal tax rates, through clawbacks, that can discourage work. But because vouchers are not site specific, they do not impede labor mobility as much as project-based assistance and so appear to have a smaller effect on work incentives.

Olsen et al. (2005) similarly found that all housing assistance discourages labor participation, but also that tenant-based subsidies discourage labor participation less than other kinds of subsidy.

Having said all that, a comprehensive study of vouchers as housing policy per se, such as the Experimental Housing Allowance Program, is long overdue. The most important recent study on vouchers comes from Susin (2002), who maintained that vouchers push up rent enough that the costs to nonvoucher recipients is greater than the benefit to voucher recipients. This argument is not necessarily against vouchers but suggests that, when vouchers are not distributed comprehensively, they can harm those individuals who do not receive them.

The question of the effect of vouchers on rents is what economists would call an elasticity question. Susin (2002) noted that locations with more vouchers had higher rent increases than those with fewer vouchers. But disentangling this observation from other market characteristics—such as differences in supply elasticities across metropolitan areas—is very difficult. Susin's results are also inconsistent with previous literature (Barnett and Lowry, 1979).

When thinking about rental subsidies, it is therefore important to consider elasticities: how sensitive housing markets are to changing quantities in response to changing rents, and how sensitive housing costs are to changing incomes. If housing quantities are quite responsive, then subsidies will have a small effect on rents; if they are not responsive at all, rents will rise. If rents rise and not everyone gets a subsidy, those who do not get the subsidy can be made worse off by the subsidy program. To understand how the benefits of vouchers are distributed among tenants and landlords, studies of housing elasticity—especially elasticity around the bottom one-half of the rent distribution, is crucial.

Conclusion

This article argues that in a second-best world, one in which the federal government provides substantial benefits to owners and local zoning is often hostile to renters, rental subsidies may be appropriate on both equity and efficiency grounds.

Not all rental subsidies are created equal, however. Rent control is inefficient and often inequitable. Tax credits may encourage low-rent housing in places it is least needed and may be very "leaky"; a large share of the subsidy does not find its way to renters. Vouchers are the most promising form of rental assistance, but when they are not entitlements, they may produce perverse results.

HUD could develop better measures of housing market characteristics—especially supply elasticities for low-cost housing—and tailor housing policy based on that research. Reducing funding for tax credits and redirecting it to vouchers may also produce better outcomes. It would be worth at least testing the effect of rental subsidy entitlements for vouchers in small markets. A comprehensive study of the effectiveness of current large housing programs, including Housing Choice Vouchers, Section 8 project-based assistance, and Low-Income Housing Tax Credits, akin to the Experimental Housing Allowance Program,[18] is long overdue.

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Author

Richard K. Green is a professor and Lusk Chair in Real Estate at the University of Southern California.

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Rental Housing: Current Market Conditions and the Role of Federal Policy

Denise DiPasquale
City Research

Abstract

This paper examines the impacts of the recession, the foreclosure crisis, and the freeze in the credit market on the rental housing market and the resulting implications for federal policy. In some markets, high rental vacancy rates, falling rents, and declining renter incomes threaten the financial viability of many rental housing properties. Rental housing property values have declined and delinquency and foreclosure rates are increasing. Fannie Mae and Freddie Mac now dominate the multifamily mortgage market. The reconstruction of the nation's housing finance system must include consideration of the financing needs of the multifamily mortgage market. The widespread recognition of the risks associated with homeownership demonstrated by the foreclosure crisis provides the opportunity to move to a national housing policy that levels the playing field between owning and renting. Scarce subsidy dollars should be more targeted to the neediest citizens.

Introduction

In the historic foreclosure crisis and the collapse of housing prices, policymakers and the press have focused virtually all of their attention on the owner-occupied housing market. Conditions in the rental housing market are also very difficult. Rental vacancy rates are at historic highs, rents are falling in many markets, and the incomes of renters are falling. Multifamily property values are falling and delinquencies and foreclosures in the multifamily mortgage market are on the rise. A growing number of properties have outstanding mortgage balances that exceed current property values; the number of rental properties with negative cash flows is growing. Most of the major providers of multifamily mortgages (commercial banks and commercial mortgage-backed securities [CMBS]) have exited the market. In the past 2 years, Fannie Mae and Freddie Mac have been responsible for funding 80 to 90 percent of new multifamily mortgage originations.

The current rental housing market conditions pose serious policy challenges. As the United States works through the housing crisis, many households that go through foreclosure will transition from homeowners to renters. With fewer homeowners, some portion of the foreclosed homeowner stock will enter the renter market. Who will own and manage those properties? The precarious financial position of rental properties could lead to disinvestment and, if these conditions persist, eventual abandonment. The biggest challenge facing the multifamily market is the credit crisis. As policymakers reconstruct the nation's housing finance system, consideration must be given to the credit needs of rental housing providers. The emerging consensus that homeownership is not for everyone provides the opportunity to rethink the roles of homeownership and rental housing in federal housing policy.

The next section of this article provides a description of current conditions in the rental market followed by a discussion of the effects of the foreclosure and credit crises on the rental market. The article then examines the expected changes in the housing stock to accommodate the decrease in homeownership. The article concludes with a discussion of short-term policy options to address current problems and suggestions for revamping the nation's housing policy over the long term.

Rental Housing Market

Nationwide, more than 35 million households (one-third of total households) live in rental housing. More than 80 percent of these households (29 million) rent housing in the private market from landlords who receive no government subsidy. The subsidized privately owned rental stock houses about 5 million households; public housing provides homes for 1.3 million poor households.

The rental housing stock is quite diverse. In 2005, 25 percent of the rental units were single-family detached homes, 25 percent were in two- to four-unit buildings, and 11.4 percent of rental units were in structures with 50 or more units. The rental housing stock is distributed across the country, with 43 percent of rental units in central cities, 40 percent in suburban communities, and 17 percent in rural areas (U.S. Census Bureau, 2005b). A significant portion of the rental housing stock is old: 34 percent of rental units were built before 1960, and only 18.7 percent of rental units were built since 1990 (U.S. Census Bureau, 2005a).

The primary problem facing renters over the past few decades has been affordability. Much of the current research on rental housing demonstrates that low-income households spend larger fractions of their incomes on rent over time. DiPasquale and Murray (2008) showed that, between 2000 and 2005, real rents rose about 9 percent across 20 large metropolitan areas. During the same period, renter household income fell about 5 percent. The boom in homeownership during those years accounts for some of this income decline among renters as large numbers of higher income renters moved into the homeowner market (DiPasquale and Murray, 2008). Entering the recession, the real price of rental housing services was at its highest recorded level, while renters' incomes were lower than in 1970. Rent-to-income ratios were higher than they had been since the early 1930s.

The rental housing market is experiencing historic vacancy rates and declining real rents in most markets. In 2009, the rental vacancy rate peaked at 10.6 percent. In 2010, the rental vacancy rate was 10.2 percent. As shown in exhibit 1, high vacancy rates persist throughout the rent distribution,

Exhibit 1

2010 Vacancy Rates by Rent

Rent	Vacancy Rate
All specified renter units	10.6
Less than $300	3.6
$300 to $349	9.1
$350 to $399	13.5
$400 to $449	13.1
$450 to $499	14.0
$500 to $599	11.1
$600 to $699	11.7
$700 to $799	10.9
$800 or more	10.5
$800 to $899	11.4
$900 to $999	11.0
$1,000 or more	10.0
$1,000 to $1,249	9.7
$1,250 to $1,499	9.0
$1,500 or more	11.1

Source: U.S. Census Bureau, Housing Vacancies and Homeownership (CPS/HVS); http://www.census.gov/hhes/www/housing/hvs/annual10/ann10ind.html

except for units that rent for less than $300 per month; the vacancy rate for these units is 3.6 percent. For units with rents between $300 and $350, the vacancy rate jumps to 9.1 percent; for units with rents between $350 and $400, the vacancy rate soars to 13.5 percent. The declines in real rents observed during the recession translate into increased cash flow problems for landlords. For many renters, declines in rents have been outstripped by drops in income, making their already historically bad situation even worse.

The Foreclosure Crisis in the Rental Market

The current foreclosure crisis has significant impacts on the rental housing market. Large numbers of rental housing units are in buildings that have foreclosed or are at risk of foreclosure. The Joint Center for Housing Studies estimated that investor-owned one- to four-unit properties account for 20 percent of properties in foreclosure nationally (Joint Center for Housing Studies, 2008). Structures with one to four units are financed by single-family mortgages. About one-half of the renters in the United States live in one- to four-unit buildings.

Although data on the performance of single family mortgage investments are available, far less data are available on the performance of multifamily mortgages (mortgages on structures with five or more units). Those data that are available show considerable variation in the performance of multifamily mortgage loans. The Fannie Mae and Freddie Mac multifamily mortgage business has performed considerably better than their single-family mortgage business. In 2010, Fannie Mae reported a multifamily serious delinquency rate (60+ days delinquent) of 0.71 percent, up from 0.3 percent in 2008. Freddie Mac reported a multifamily serious delinquency rate of 0.26 percent, up from 0.05 percent in 2008. In 2010, the Fannie Mae and Freddie Mac single-family serious delinquency rates were 4.48 and 3.84 percent, respectively (Fannie Mae, 2011; Freddie Mac, 2011).

The Fannie Mae and Freddie Mac multifamily delinquency rates are substantially better than those for the multifamily CMBS. In 2010, the serious delinquency rate for multifamily CMBS reported by Trepp, LLC, was an astounding 13.6 percent.[1]

Although their multifamily investments are performing relatively well, both Fannie Mae and Freddie Mac have expressed concerns about this business going forward. In Fannie Mae's 10K filing for their 2009 fiscal year, they note that their 2007 multifamily loan acquisitions are showing signs of stress, which they attribute to the fact that the loans were acquired at the peak of multifamily property values. Since 2007, falling property values and rents have adversely impacted the financial viability of some of these properties. For Fannie Mae, 2007 vintage multifamily loans represent 24 percent of their 2009 multifamily guarantee business and 48 percent of their delinquencies (Fannie Mae, 2009a: 165). In their 2010 10K filings, both Fannie Mae and Freddie Mac indicate that they expect continued increases in nonperforming multifamily loans into 2011, despite some signs of stabilization in the national rental market. Both firms cite continued weakness in the overall economy; high unemployment; and the ongoing tough housing market conditions in some regions of the country (Fannie Mae, 2010: 6; Freddie Mac, 2010: 68). Arizona, Florida, Georgia, and Ohio account for only 10 percent of Fannie Mae's multifamily book of business, but 39 percent of their serious multifamily delinquencies (Fannie Mae, 2010: 170).

Shilling (2010) assembled new data on the financial condition of rental housing in Chicago and provides a detailed analysis of the impact of foreclosures on the rental stock in buildings with two or more units. The results of Shilling's analysis are certainly consistent with Fannie Mae's description of the national market and suggest continued increases in the number of rental properties in foreclosure. By the end of 2009, in Cook County, IL, foreclosed rental properties with two or more units contained about 32,000 rental units, a unit count which is similar to the 38,000 single-family homes that were in foreclosure. Shilling's data show that rental foreclosures are highly concentrated in low- and moderate-income neighborhoods.[2] In 2009, foreclosure rates on properties with two to six units range from 13.9 percent in low-income neighborhoods, to 10.8 percent in moderate-income neighborhoods, to 4.2 percent in high-income neighborhoods—up considerably from rates of 4.7, 2.3, and 0.5 percent, respectively, in 2005. In properties with seven or more units, 2009 foreclosure rates were 7.8 percent in low-income neighborhoods, 4.3 percent in moderate-income neighborhoods, and 2.1 in high-income neighborhoods, up from 2.3, 0.5, and 0.0 percent, respectively, in 2005.

Perhaps the most troubling result in Shilling's report is the significant decline in rental property values during the past few years. For larger properties with seven or more units, values have declined 26 percent since 2006; values of two- to six-unit properties have plummeted 46 percent since 2007. Shilling estimates that these declines in property values result in 30 percent of outstanding mortgages on rental properties being at risk of default. In addition, some portion of the foreclosed owner-occupied housing stock will be converted to rental housing, which will put additional downward pressure on rental property values.

[1] Trepp, LLC, provided the author with data on CMBS multifamily serious delinquency rates.

[2] Low-income neighborhoods are defined as census tracts where median household income is less than 150 percent of the poverty level of a family of four in the 2000 Census. Moderate-income tracts have median incomes between 150 and 300 percent of the poverty level and high-income tracts have median incomes above 300 percent of the poverty level.

Shilling's results are based on only one county and, therefore, are difficult to generalize to the rest of the country. Widespread declines in rental property values, such as those found in Cook County, could substantially impact the rental housing market for many years to come. To increase the understanding of the state of the multifamily housing markets nationally, similar data collection efforts in more local markets are needed.

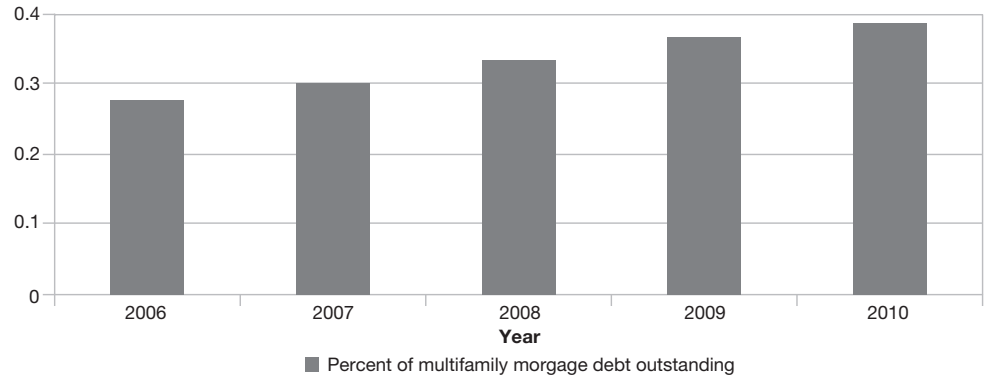
Credit Crisis in the Multifamily Mortgage Market

The credit crisis is significantly affecting the multifamily mortgage market, which is defined as the market for mortgages on structures with five or more units. Banks have retreated from this market. In 2006 and 2007, Wachovia and Washington Mutual, Inc., were the top two multifamily mortgage originators nationally (together accounting for more than 18 percent of the market in 2006); both have been acquired by other institutions and have largely exited the market. The Mortgage Bankers Association reported a 67-percent decline in multifamily mortgage originations from a peak in the fourth quarter of 2006 to the fourth quarter of 2009. In 2008, conduits for CMBS had virtually disappeared from the market and currently show few signs of returning to the market (MBA, 2010).

Although traditional market participants retreated, Fannie Mae and Freddie Mac increased their market participation in 2008. In 2008, Fannie Mae and Freddie Mac funded $35.5 billion and $24.3 billion, respectively, of multifamily mortgages (Fannie Mae, 2009b; Freddie Mac, 2009). The government-sponsored enterprises (GSEs) funded between 20 and 30 percent of new multifamily mortgages in 2004 through 2006. GSEs funded between 80 and 90 percent of the new multifamily mortgages in 2008 and 2009. As shown in exhibit 2, as of the end of 2010, the GSEs held or guaranteed almost 39 percent of the outstanding multifamily mortgage debt, up from about 27 percent in 2006 (Board of Governors of the Federal Reserve System, 2011).

Exhibit 2

Percent of Multifamily Mortgage Debt Outstanding Held or Guaranteed by GSEs



GSE = government-sponsored enterprise.

Source: Board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States, Z1 Release, March 2011, Table L219; (http://www.federalreserve.gov/releases/z1/Current/z1r-4.pdf)

The lending freeze by many traditional multifamily lenders and the increasing dependence on Fannie Mae and Freddie Mac for funding multifamily mortgages raises serious concerns about the future of multifamily mortgage market. Although the recession, particularly the job losses, has resulted in a downturn in new construction, demand for multifamily mortgages continues for refinancing and for purchases of existing buildings. From 2008 through 2010, Fannie Mae and Freddie Mac largely kept the multifamily mortgage market open. Given the uncertain futures of both Fannie Mae and Freddie Mac, there is reason for concern about the availability of multifamily mortgage financing to meet future financing needs.

Raising equity for multifamily projects became considerably more difficult in 2008 and 2009. Losses were common for apartment real estate investment trusts (REITs) and many lowered earnings expectations for 2010. The market for Low-Income Housing Tax Credits (LIHTC) had virtually disappeared in 2008 and 2009. In the early years of the LIHTC program, a diverse group of investors participated in the program. Tax credits were sold to individual investors via retail funds, and corporate participants represented a broad range of sectors of the U.S. economy. Over time, the financial services sector dominated the market for tax credits and corporate investors from other sectors of the economy decreased their participation in the market. For tax credit syndicators, financial services companies were very motivated customers. Banks could use the tax credit investments to meet Community Reinvestment Act requirements. Fannie Mae and Freddie Mac could use the tax credits to meet growing affordable housing requirements under their charters. With banks and Fannie Mae and Freddie Mac crashing and few nonfinancial services investors left in the game, the tax credit program ground to a halt. To address this issue, the American Recovery and Reinvestment Act (ARRA) of 2009 included a provision permitting state-tax-credit allocating agencies to receive up to 40 percent of their tax credit allocations in the form of cash to help fund stalled tax credit projects.

The LIHTC program appeared to be rebounding in 2010, when significantly more LIHTC equity was raised than in 2008 or 2009. Some investors, including insurance companies and some banks, returned to the market (Petherick, 2011). This rebound, particularly for new construction, is somewhat surprising given the high vacancy rates in the rental market and the number of foreclosed owner-occupied units that may ultimately convert to rental housing. The incentives provided by the LIHTC program may encourage more development than warranted given the soft conditions in the rental market.

The LIHTC program faces significant challenges going forward. Federal budget cuts and the possibility of substantial tax reform could eliminate or substantially alter the program. Many LIHTC projects depend on federal, state, and local subsidy dollars that may become scarce with the expected federal budget cuts and the dire fiscal conditions of many state and local governments. In addition, the uncertain role of Fannie Mae and Freddie Mac in the anticipated revamping of the nation's housing finance system could significantly impact the LIHTC market. Some LIHTC deals use their multifamily loan programs as a source of financing. In addition, both firms have substantial LIHTC holdings that could be sold as part of the restructuring or dismantling of these firms. Sales of these LIHTC holdings would compete with new LIHTC transactions for investors.

Rebalancing the Housing Stock and the Threat of Disinvestment

Current conditions in the housing market raise important concerns about the future quality of the housing stock. The large number of homeowners losing homes to foreclosure will result in fewer homeowners, with a portion of that foreclosed stock entering the rental housing market. The foreclosed owner-occupied housing stock may provide new rental opportunities in communities that previously provided few, because of land use regulations and not in my backyard (NIMBY) concerns. Renters moving into such communities may now be preferred to the prospect of vacant, foreclosed properties.

Although the foreclosed owner-occupied stock may offer new opportunities for renters, the process of successfully transitioning large numbers of housing units from owner- to renter-occupied raises an important question: how fungible is the housing stock? In many growing, gentrifying urban areas in America, large numbers of rental properties have been converted to ownership properties, but there is far less experience with large numbers of ownership to rental conversions.

As stated previously, structures with one to four units account for 50 percent of the rental housing stock. A large fraction of these properties are owned and operated by small (mom and pop) investors. Who will invest in and operate the one- to four-unit properties available in the foreclosed stock as rental units? The number and capacity of mom and pop investors may be too small to absorb much of the owner-occupied foreclosed stock that will transition to renter-occupied. Larger private and nonprofit providers of rental housing tend to develop and acquire larger properties and seem reluctant to consider smaller one- to four-unit properties. Some larger rental housing providers have argued that because of the unique characteristics of each property, management costs are too high with scattered site one- to four-unit properties. To take advantage of the opportunities available in the foreclosed stock, developers and managers of affordable and market rate rental housing will need to consider new approaches to acquisition, development, and management.

Successful examples of managing single-family rental housing do exist. The Cleveland Housing Network (CHN) has extensive experience managing a lease to purchase program where single-family homes are developed or rehabbed under the LIHTC. The homes are rented for 15 years, with the goal of transitioning the unit to homeownership in year 16. Currently, CHN has 1,800 homes under management and has sold 500 homes (Durban and Whipkey, 2011). For this portfolio of homes, a property manager is responsible for managing 125 to 150 homes, which is comparable to the number of units assigned to many multifamily property managers.[3]

Foreclosures in condominium developments are common in many markets and present a unique set of challenges. Unit owners threatened with the prospect of foreclosure have little incentive to pay condominium fees. Condominium associations have few options to recover monthly fees. In large buildings with a substantial number of foreclosures or small buildings with just a few, the remaining residents face a substantial burden to maintain the complex and sustain the level of amenities.

[3] The CHN provided data on units per property manager to the author.

In the existing multifamily rental stock, increases in the number of vacancies and foreclosures coupled with declines in property values, rents, and renter household incomes will certainly decrease the quality of this portion of the rental stock. Shilling (2010) found that, in the city of Chicago, net rental revenues are at or below total operating costs for about 74,000 rental units, or about 12.5 percent of the rental stock. Property managers facing stagnant or declining rents often face increasing costs in areas such as property taxes, insurance rates, and energy costs.

Rising energy costs are particularly a problem for the multifamily stock because of the age of the stock. Housing built in the 1990s is about 23 percent more energy efficient than housing built before 1960 and 17 percent more efficient than housing built in the 1960s and 1970s (Brown and Wolfe, 2007). Not much data are available on energy costs in multifamily structures, but the experience with public housing is well documented. Rising energy costs contribute significantly to the operating subsidy shortfalls in public housing. The U.S. Department of Housing and Urban Development (HUD) spends $4 billion on energy per year, which is more than 10 percent of its operating budget. In 2004, HUD reimbursed public housing authorities $1.3 billion for utilities, representing 22 percent of total operating expenses (HUD, 2008).

Improving the energy efficiency of the multifamily housing stock presents significant challenges. Much of the weatherization and other public subsidy programs are focused on homeowners and are sometimes difficult to adapt to multifamily structures. In addition, owners and tenants face different incentives making it difficult to align the costs and benefits of investments in energy efficiency. Owners of buildings with individually metered units have little incentive to make investments to improve energy efficiency because most of the savings go to the tenants, not the owners. In buildings where tenants do not pay utilities but control consumption, one study estimated that tenants set thermostats 1 to 3 degrees higher than tenants who pay utilities (Brown and Wolfe, 2007).

Managers of cash-strapped multifamily rental properties are likely to forgo maintenance, which will decrease the quality of the property over time. This filtering down of rental units may provide affordable housing opportunities for low-income households in the intermediate term, but if these conditions persist, units may be lost from the stock because of abandonment by property owners. In markets with rising vacancy rates and declining rents that were overbuilt during the housing boom, the stock is expected to shrink as the market adjusts. Losing viable units because of a frozen credit market or declining incomes, however, raises concern about the long-term availability of affordable rental housing. When the distressed properties are concentrated in low-income neighborhoods that serve some of the nation's poorest citizens, property abandonment can significantly decrease the affordable housing options available to low-income households and add to the blight of these neighborhoods.

Federal Response to the Crisis

The federal policy response to the current crisis has focused almost exclusively on homeownership. The creation of two rounds of homebuyer tax credits and the various loan modification and foreclosure mitigation efforts have received much attention. The bailouts of Freddie Mac, Fannie Mae, commercial banks, investment banks, and insurance companies have focused on cleaning up the subprime mortgage mess.

Renters displaced by foreclosures had no access to resources available to homeowners going through foreclosure and often had to move and find new housing with little notice. Congress enacted the Protecting Tenants at Foreclosure Act of 2009 to provide tenants with at least 90 days to move from a home that has been sold at foreclosure. If the tenant has a bona fide lease in place at time of foreclosure, the lease must be honored unless the new owner will occupy the unit as a primary residence. These tenant protections were set to expire at the end of 2012 but were extended to the end of 2014 in the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.

Current conditions in the rental housing market suggest that foreclosures will continue to rise, which will have a significant adverse effect on renters and rental property owners. The Dodd-Frank Act requires that the Secretary of Housing and Urban Development develop a Multifamily Mortgage Resolution Program that will protect tenants and at-risk multifamily properties by creating sustainable financing, maintaining current levels of subsidy, providing rehabilitation funds, and facilitating the transfer of troubled properties to new owners—all of which will help maintain the affordability of the existing units.[4]

In the near term, existing housing programs could be modified or expanded to address the declining economic status of renters in this downturn and the precarious financial condition of an increasing number of rental properties. The housing voucher program could be expanded to include more eligible households. New vouchers could, for example, target renter households displaced by foreclosures, increasing their ability to find new housing. Vouchers spent on rents for vacant units, as well as those that allow renters to fully meet their rent obligations, could ease the cash flow problems facing many multifamily property owners. Providing vouchers to renters would likely have strong stimulative effects on the economy because low-income households have low savings rates.

Bringing the foreclosed one- to four-unit stock back into the market is a clear priority. Turner (2009) suggested that the Neighborhood Stabilization Program, which received $2 billion in funding under the ARRA, should be used to provide technical assistance to rental housing providers to convert viable foreclosed ownership stock to rental housing. These conversion efforts should focus on foreclosed units in "opportunity-rich" communities, where few affordable rental housing options exists due to land use restrictions. The LIHTC, the major federal housing production program, could be modified to provide incentives for developers to convert foreclosed stock to viable rental housing. In addition, the LIHTC could be used to encourage investments in the existing multifamily stock to improve energy efficiency or to reverse the disinvestment that may occur because of current market conditions.

The largest issue facing rental housing is the credit crisis and its implications for the multifamily mortgage market. In any consideration of the future of Fannie Mae and Freddie Mac, the needs in the multifamily mortgage market must be considered. The Dodd-Frank Act acknowledged the importance of the GSEs to the multifamily mortgage market by mandating that the Treasury Secretary conduct a study and develop recommendations to end the conservatorship of Fannie Mae and Fannie Mae, including an analysis of the impacts of housing finance reform on the financing of

[4] Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Sec 1481.

rental housing.[5] The GSEs are essentially the only source of multifamily mortgages in the market today; with no signs of other providers on the horizon. Their current importance in the multifamily mortgage market does not mean that Fannie Mae and Freddie Mac must exist in their current form going forward, but rather that the multifamily mortgage market must be considered when the nation's housing finance system is reconstructed. Rebuilding the multifamily part of the housing finance system requires more analysis of the state of the market nationally and in local markets. The current dearth of publicly available data on the market could be mitigated by making the multifamily portfolio data from Freddie Mac and Fannie Mae available to researchers and policymakers. Given the level of taxpayer support of Fannie Mae and Freddie Mac, it seems reasonable that taxpayers benefit from the lessons learned from both firms' experiences in the multifamily mortgage market.

Rethinking Federal Housing Policy

The housing market crash has brought decades of federal housing policy into sharp focus. A critical examination of the role of government in the housing market is essential. It is time to rethink government intervention in the housing market by going back to first principles. Although promoting homeownership has been the centerpiece of federal housing policy for six decades, the current crisis clearly illustrates that homeownership is not for everyone. Owning a home is a significant investment that can be risky. Homeowners, like investors in any other market, need to have the resources to weather downturns in the market. It is crucial to target scarce federal resources to efficiently achieve policy objectives. In this reassessment of federal policy, all subsidies, whether direct cash subsidies or subsidies provided via the tax code, should be part of the discussion. What are the federal policy goals? How should scarce subsidies be allocated between rental housing and homeownership?

The mortgage interest deduction is the major subsidy to homeownership that, according to the Congressional Budget Office (CBO), resulted in a revenue loss of $80 billion in 2009 (CBO, 2009).[6] In addition, the subsidy to the single-family mortgage market provided by the GSEs mounts as the bailout continues. In his article in this issue of *Cityscape*, Glaeser (2011) argues that it is time to rethink the homeownership subsidies. He argues that the results of the housing crash challenge the standard assumption that homeownership is a path to wealth accumulation, acknowledging that it is an investment that carries substantial risk. He also argues that the subsidies are regressive, because a disproportionate share of the benefits go to the wealthiest Americans and that the subsidies encourage the purchase of larger homes, which has resulted in increases in energy consumption, lot sizes, sprawl, and commuting times.

Another traditional argument for favoring homeownership is that homeowners have a stake in their local communities and therefore have an incentive to invest in social capital. DiPasquale and Glaeser (1999) provided evidence that homeownership encourages investments in social capital.

[5] Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Sec 1074 (F).

[6] CBO estimates the revenue loss from the deduction of state and local property taxes at $16 billion and the revenue loss from the capital gains exclusion at another $16 billion.

Homeownership increases memberships in nonprofit organizations, voting in local elections, the ability to identify his or her U.S. Representative or school board head, and a willingness to help to solve local problems. They also found, however, that a large portion of the effect of homeownership on increased investments in social capital is due to lower mobility rates among homeowners, which results in longer tenure in the community.

Sinai and Souleles (2005) argued that homeownership is a hedge against rent risk. Most owners (those with the very common 30-year fixed-rate mortgage) face constant mortgage payments while rents adjust annually. Could the community benefits often attributed to homeownership be achieved in rental housing with longer term leases? The increased mobility of renters with short-term leases provides substantial benefits in terms of pursuing economic opportunities. However, for households at a stage in life where increasing the length of time in one community is preferred (for example, a family with kids in school), a stable rental situation could be very attractive. Longer rental contracts would also benefit landlords by decreasing the costs of frequent tenant turnover.

Why have long-term leases not become a readily available option in the marketplace if there are potential benefits to both the tenant and the landlord? Although the concept is very simple, the details are not. What would be a reasonable penalty for breaking a lease before the end of the term? Under what conditions could the renter break the lease with no penalty? What happens if unit condition changes during the term of the lease? How much would a landlord save with less frequent turnover? Both the tenant and the owner would need to fully understand the risks and rewards of the longer term lease. Federal policy could play a very important (and inexpensive) role in exploring the viability of longer term leases by setting up a pilot program to experiment with standards for such leases and providing incentives for rental housing providers to experiment with longer term leases as a tool for building stable, long-term rental communities. Federal policy provided just this type of leadership in developing mortgage standards that led to the widespread acceptance of the 30-year fixed payment mortgage, including standards for prepayment penalties.

The basic rationale for federal involvement in rental housing has centered on the goal of ensuring a safe and affordable living environment for poor households, the elderly, and the disabled. Assisting these vulnerable populations and ensuring the availability of housing with the necessary services required by special needs populations, are worthy endeavors. A fundamental difference between the subsidies for homeownership and those for rental housing is that homeownership subsidies are entitlements while subsidies for renters are discretionary. The mortgage interest deduction is available to anyone who files a tax return and decides to take the deduction. Any homebuyer who qualifies for a Fannie Mae or Freddie Mac conforming loan receives the benefit of a lower interest rate because of the implicit subsidy to the GSEs. No eligibility criteria exist, which means that the subsidies to homeowners are provided regardless of income or wealth. Recipients of rental housing subsidies must qualify by having income below program limits. In addition, rental assistance programs are subject to budget limitations, which means that not all eligible households receive subsidy. Currently, only about 23 percent of those eligible for rental assistance in the United States actually receive that assistance (Turner, 2009).

The largest rental housing subsidy program is the Housing Choice Voucher; in 2009, CBO estimates that $16 billion was spent on vouchers. Public housing is the second largest program, costing

taxpayers $11 billion in 2009 for operating expenses, capital improvements, and limited new construction, largely under HOPE VI. The LIHTC resulted in a revenue loss of about $6 billion.

Vouchers have become the centerpiece of federal rental housing policy during the past three decades, offering flexibility to recipients in choosing housing and neighborhoods. Vouchers can be short term or longer term, and the program can grow and contract as the needs of the target population change.

Taxpayers have made substantial investments in public housing and in privately owned subsidized stock during the past six decades. The nation's affordable housing stock is a valuable, long-term, national asset that serves working low-income families and the poorest members of U.S. society. Housing units are long-term assets that require significant investments over time. At this point, a substantial portion of resources available for rental housing is committed to maintaining the existing stocks of units created by programs that are no longer active (DiPasquale, Fricke, Garcia-Diaz, 2003). Allocating resources to build housing assets in particular locations is a long-term commitment not easily undone. Such commitments make it difficult to reallocate resources to address changes in the housing market like those experienced in the current housing crisis. Future long-term commitments to building housing assets should be carefully considered with a critical assessment of their long-term value.

With rental vacancy rates near historic highs, downward pressure on rents and the growing foreclosed housing stock, subsidized new construction is difficult to justify in most markets around the country. Yet, new construction continues under the LIHTC program. The program could be modified to limit new construction to only markets where a demonstrated need for new units exists. Additional modification could be made to give priority to projects that would repurpose the foreclosed stock or those that would provide investment dollars to preserve at risk rental properties. Tax credits and other subsidies are allocated on the basis of population rather than market conditions. Although the political advantages of allocation by state based on population are clear, such allocations can result in scarce subsidy dollars going to markets that have little need while markets where conditions are much worse, have too few resources. Allocating tax credits (or other federal funding) based on market conditions and needs rather than on population would result in better outcomes.

With the current crisis, a consensus is emerging that homeownership is not for everyone. This consensus provides an opportunity to strengthen both the rental and owner-occupied housing markets. Putting rental and owner-occupied housing on a level playing field will broaden the housing choices available to all households. Ending the preferred status of homeownership will give households a clear choice in selecting the tenure that best matches their financial situation and their stage in life. Rental housing could be viewed more broadly as long-term housing rather than a stepping stone to homeownership.

As federal housing policy is revamped, all direct subsidies and subsidies for housing provided via the tax code must be reconsidered. Scarce subsidy dollars should be targeted to the neediest in our country. The full costs and risks to taxpayers of any long-term commitments whether for building subsidized housing units or the new housing finance system must be assessed before making such commitments.

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Author

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Rental Housing Affordability Dynamics, 1990–2009

Rob Collinson
U.S. Department of Housing and Urban Development

Abstract

Housing is the single largest expense for most American families. For one-third of American households, this expense is not a monthly mortgage payment to a lender, but rather a monthly rent payment to a landlord. Rental housing is the typical tenure choice for the young, the elderly, the disabled, people in highly mobile professional sectors, and low-wage working families, it is also likely to be an important alternative—at least in the short term—for many of the millions of families uprooted by the foreclosure crisis. In light of the potential increased role of rental housing as a tenure option, this article attempts to (1) describe key facts and trends in the affordability of rental housing for low- and moderate-income renters from 1990 through the recession of the late 2000s and (2) examine early evidence on the effects of the recession and foreclosure crisis on rental housing affordability. Although Harvard University's Joint Center for Housing Studies (JCHS) and the U.S. Department of Housing and Urban Development's Office of Policy Development and Research (HUD PD&R) have made important empirical contributions to the understanding of rental housing affordability trends during the past two decades, few studies have analyzed both national level and metropolitan level rental housing affordability dynamics.[1] This article is intended to provide a data-rich update on rental housing market dynamics at both the national and metropolitan levels, drawing on a variety of data sources to provide a more nuanced picture of housing trends and needs. The content is organized as follows: the first section, Renter Income Trends, analyzes trends in renter incomes at the national and metropolitan levels since 1990; the second section, Rent Trends, describes rent trends from 1990 through 2009; and the third section, Affordable Rental Housing Stock Trends, examines trends in rental housing affordability, as measured by rent burdens and affordable supply gap.

[1] See JCHS (2008) and Eggers and Mouman (2008) for an overview of national rental housing cost trends.

Renter Income Trends

The following section describes trends in renter incomes since 1990. First, broad macro renter income trends are explored, and then individual metropolitan-level trends are examined.

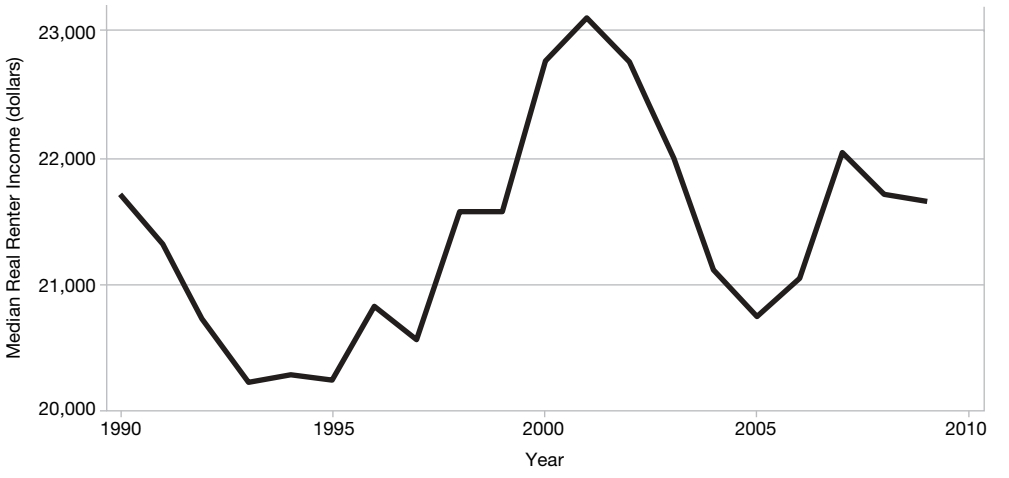
Renter Income Trends at the National Level

Before exploring rent burdens and other measures of rental housing affordability, it is useful to examine how the economic profile of renters in the United States has changed since 1990. The median renter income tended to track the performance of the broader economy. Real renter incomes declined in the first half of the 1990s, but increased as the economy picked up steam in the second half of the 1990s; the recession of the early 2000s drove renter incomes down, although some recovery existed in the mid-2000s, but real renter incomes ended the 2000s nominally below 1990 national levels (exhibit 1).

A more interesting comparison is renter incomes to all household incomes. In the 1990s the median renter earned nearly 70 percent of the median household income, and in the ensuing two decades, the median renter income fell to 62 percent of the median household income (exhibit 2). From 1990 through the present, renters have become poorer on a relative basis, and as the homeownership rate climbed, the higher income renter households became first-time homeowners. The flow of higher income renters into homeowners is likely one of the main contributors to the apparent increased stresses in rental housing affordability experienced by median-income renter households. Increased income inequality during this two-decade stretch also contributes to this phenomenon (exhibit 3).

Exhibit 1

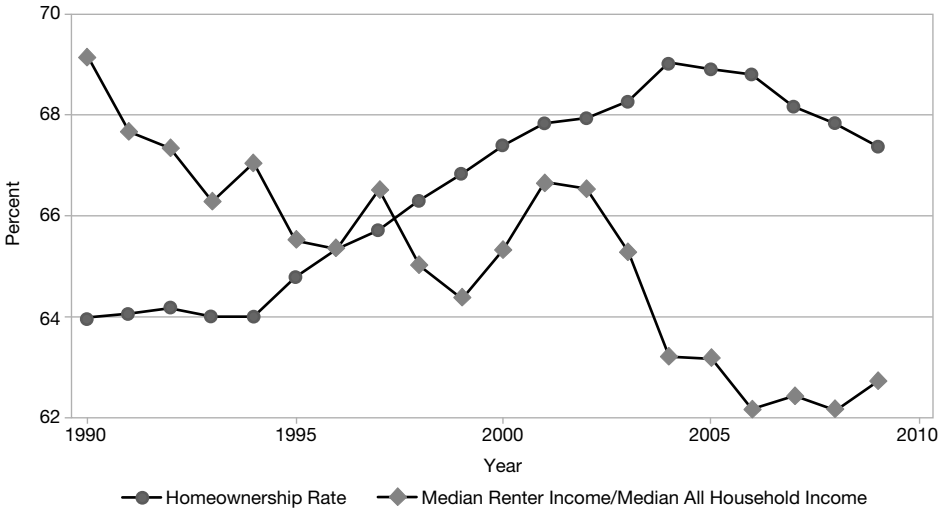
Real Renter Incomes, 1990–2009



Source: Census Bureau, Current Population Survey, Public Use Microdata Sample, 1990–2009

Exhibit 2

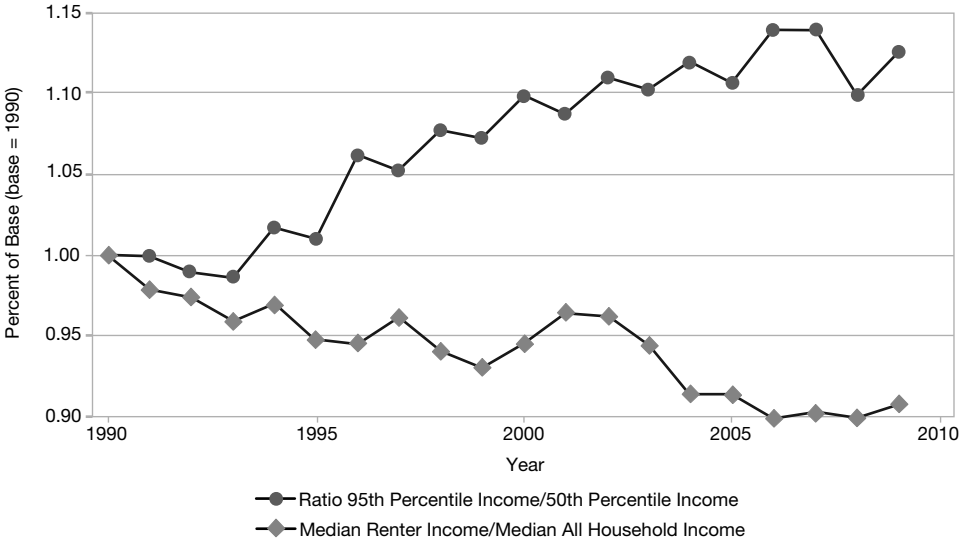
Renter Income/All Household Income Versus Homeownership Rate, 1990–2009



Source: Census Bureau, Current Population Survey, Public Use Microdata Sample, 1990–2009

Exhibit 3

Renter Income/All Household Income Versus Income Inequality



Source: Census Bureau, Current Population Survey, Public Use Microdata Sample, 1990–2009

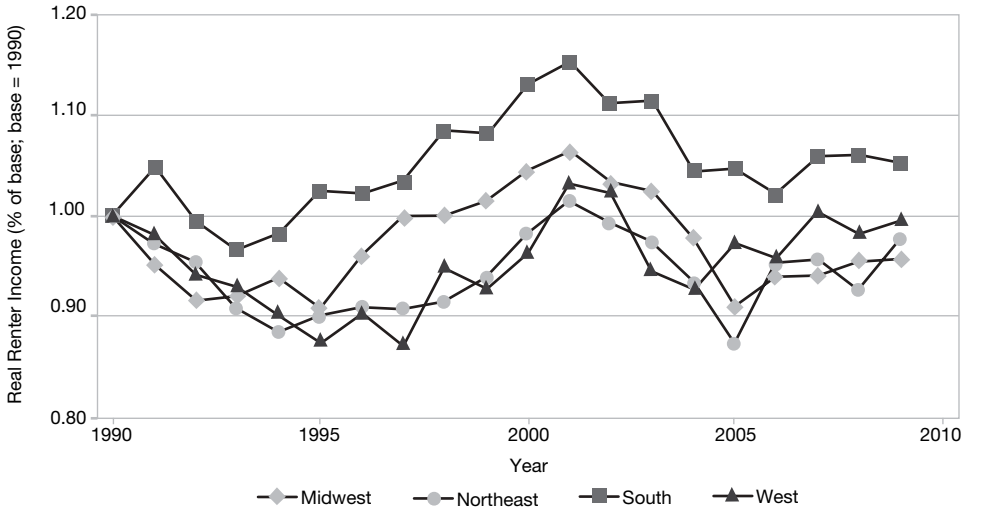
Renter Income Trends at the Metropolitan Level

Although national statistics may reveal interesting changes in the aggregate, housing, particularly rental housing, is inherently local. America's metropolitan areas are incredibly heterogeneous and have undergone profoundly distinct economic and demographic shifts during the past two decades. This article uses a time series of median renter incomes by metropolitan area derived from the 1990 and 2000 Census 5-percent Public Use Microdata Sample (PUMS), American Community Survey (ACS) PUMS 2005, and 2009 microdata from the Minnesota Population Center's Integrated Public Use Microdata Series (IPUMS). These values were converted to 2009 dollars by deflating them using the local Consumer Price Index (CPI). Accompanying the ACS-based time series are estimates of the median renter income between 1990 and 2009 from the Current Population Survey (CPS) at the census region level.

Exhibit 4 presents the real renter income by census region from the CPS. Only the South experienced an increase in real renter incomes. The other regions ended 2009 at or slightly below 1990 levels. Exhibits 5 through 8 display inflation adjusted median renter incomes between 1990 and 2009 from the metropolitan area estimates derived from the ACS PUMS. The economic boom in the second half of the 1990s lifted renter incomes in 17 of 24 metropolitan areas.[2] The 2000s were far less friendly to renters. Stalled wage growth for lower income Americans and the movement of higher income renters into the ownership space, led to falling renter incomes. By 2007 real median renter incomes had fallen below 1990 levels in 22 of 24 metropolitan areas. Only the median renters in San Francisco and San Diego had higher real income than their 1990 counterparts.

Exhibit 4

Real Renter Income by Region

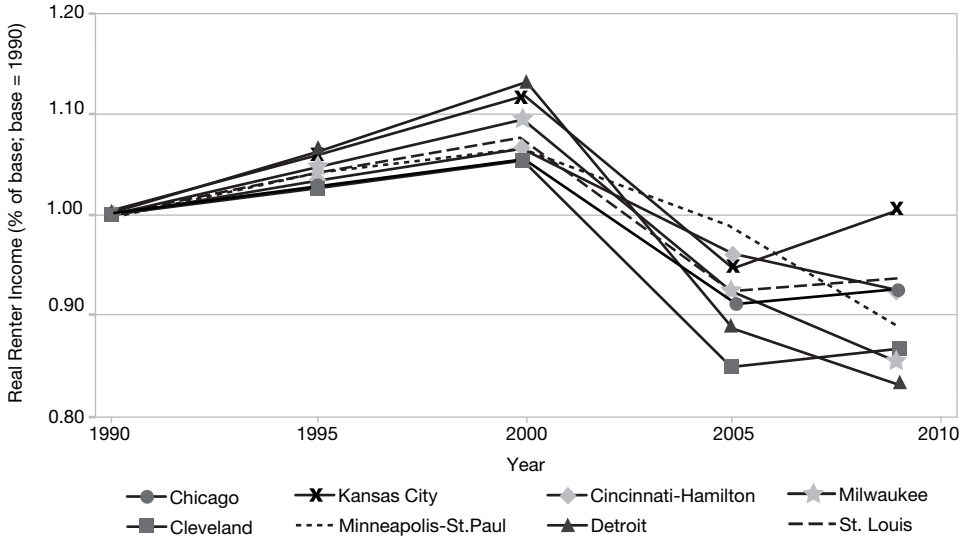


Source: Census Bureau, Current Population Survey, Public Use Microdata Sample, 1990–2009

[2] Washington, DC, and Phoenix, Arizona, needed to be excluded because the Bureau of Labor Statistics did not publish local CPIs for these two metropolitan areas going back to 1990.

Exhibit 5

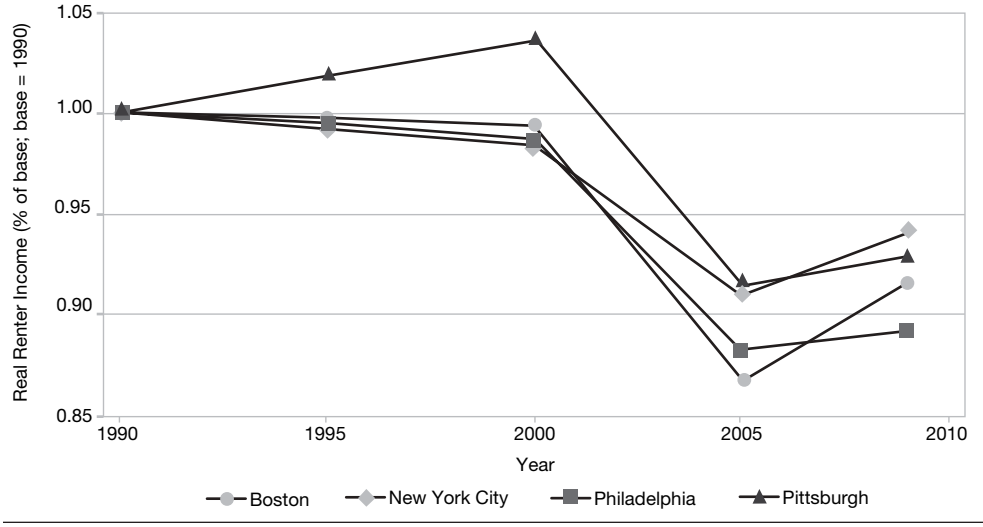
Midwest: Real Renter Income by Metropolitan Area



Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 1990, 2000, 2005, and 2009

Exhibit 6

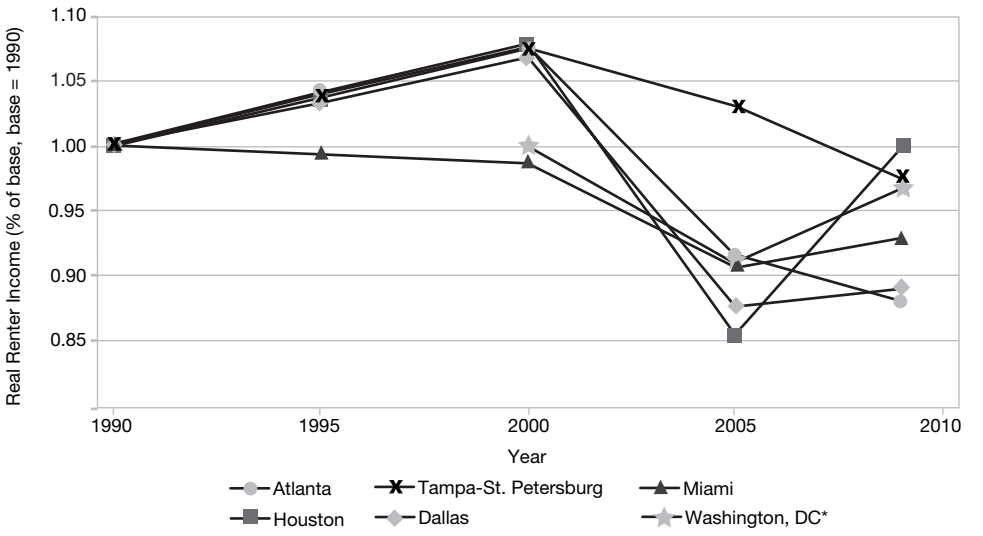
Northeast: Real Renter Income by Metropolitan Area



Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 1990, 2000, 2005, and 2009

Exhibit 7

South: Real Renter Income by Metropolitan Area

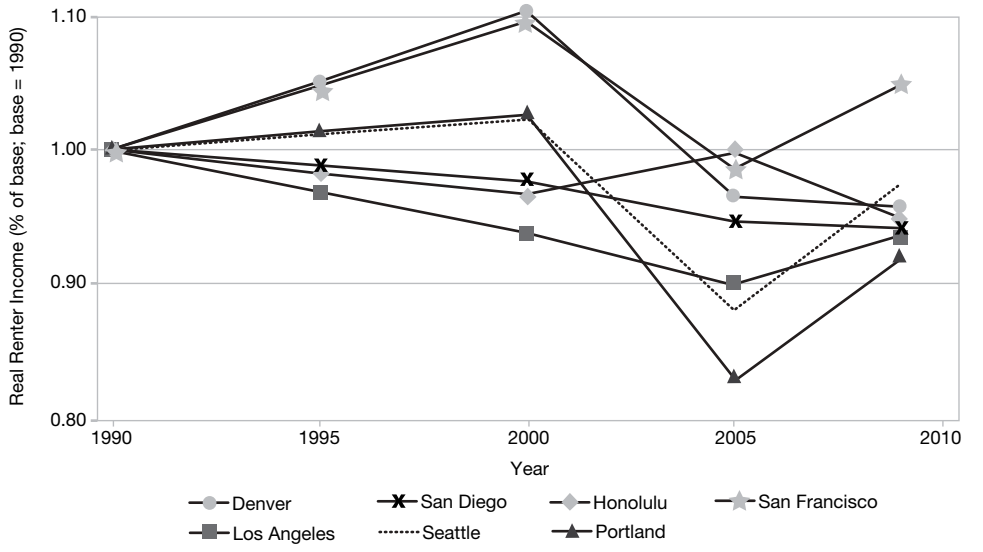


** Washington, DC needed to be excluded prior to 2000 because the Bureau of Labor Statistics did not publish local Consumer Price Indexes for this metropolitan area going back to 1990.*

Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 1990, 2000, 2005, and 2009

Exhibit 8

West: Real Renter Income by Metropolitan Area



Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 1990, 2000, 2005, and 2009

Renter Income Trends Since 2007

Beginning officially in the fourth quarter of 2007, the United States entered into what by many measures was the deepest recession since the Great Depression. Although the primary causes of the economic downturn are heavily debated, it is clear that the foreclosure crisis and tumult in the housing market were key contributors to the broader economic collapse. Much attention has been paid to the owner-occupied housing market throughout the crisis, but very little research has examined the effect of the economic recession on the rental housing market.

The most obvious effect of the recession on the rental housing market is lower renter incomes. The inflation adjusted median renter income fell by almost $1,000 from 2007 to 2009 in the ACS. The number of extremely low-income and very low-income renter households—those with incomes 0 to 30 percent and 30 to 50 percent of their local Area Median Income (AMI)—increased from 15.9 to 17.1 million households according to the AHS. These income reductions were not shared equally across U.S. metropolitan areas. The real median renter income fell in 16 of 26 metropolitan areas. Among these areas, Detroit, Michigan; Cleveland, Ohio; Minneapolis, Minnesota; and San Diego, California experienced the largest declines. Houston renters fared the best in the 2-year stretch from 2007 to 2009 with a 6-percent increase in median renter incomes.

Rent Trends

The following section explores trends in rents from 1990 through 2009 across a number of large metropolitan areas. These trends help explain the patterns of affordability levels described in subsequent sections.

Rent Trends at the Metropolitan Level

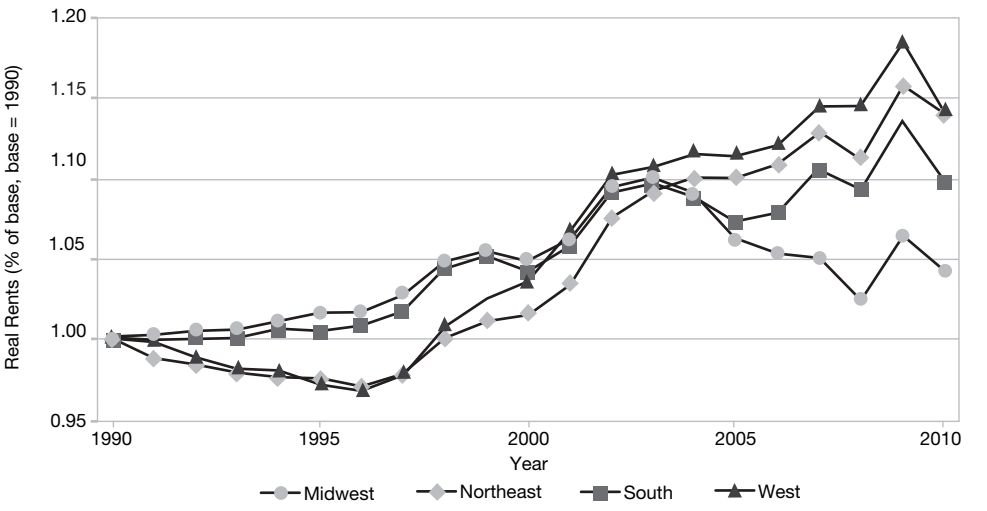
Renter incomes have largely remained flat or declined in real terms during the past two decades; understanding the change in real rents will provide a richer understanding of rental housing affordability trends. One significant limitation to any analysis of rent trends is the lack of frequent data on rents representative of the entire rental housing market. Several private housing market research firms provide rich, frequent data for a rental housing market segment. These data typically sample from exclusively larger, professionally managed properties, however, which represent no more than about one-third of the rental housing market.[3] Because a large rental housing stock segment is located in small buildings with mom and pop ownership structures that might differ in their rent-setting methods than larger professionally managed properties, these proprietary sources are not completely representative. For this reason, this analysis uses the local CPI residential rent indices, which are derived from the CPI Housing Survey and capture rental housing statistics across all structure types—mobile homes to multifamily projects. The CPI Housing Survey features six panels that are sampled biannually on a continuous cycle, so that the rent index can be refreshed monthly.

[3] Rental properties with 50 or more units make up 31 percent of the rental stock, according to the 2001 Residential Finance Survey.

The CPI publishes the residential rent index for 27 metropolitan areas and 4 census regions. Exhibit 9 shows the change in real rents by region. The Northeast and the West experienced the largest increases of nearly 15 percent from 1990 through 2009. Exhibits 10 through 13 show the movement of real rents—the rent index deflated by the less shelter index—in 24 of these metropolitan areas by region from 1990 through 2009.[4] The real rent index is normalized, so that base year 1990 has a value of zero (0), and changes can be interpreted as percentage changes relative to all other goods. With a few exceptions, the first half of 1990s were marked by downward movement in real rents, although the 10 years from 1996 to 2006 were characterized by upward movement in rents. Very apparent in these exhibits is the incredible heterogeneity in trends across different metropolitan areas. Real rents in the metropolitan areas of Chicago, Illinois; New York, New York; San Francisco, California; Los Angeles, California; San Diego, California; Miami, Florida; and Washington, District of Columbia increased by more than 15 percent during the time period. Whereas real rents fell in the metropolitan areas of St. Louis, Missouri; Cincinnati, Ohio; Phoenix, Arizona; and struggling Detroit, Michigan, which led with a 4-percent decrease in real rents. Although the statistics are inflation adjusted, median renter incomes declined relative to their 1990 level in 22 of 24 metropolitan areas, 18 of 24 metropolitan areas experienced an increase in real rents during this same period. The metropolitan areas with the largest increases in real rents are primarily major immigrant hubs or supply-constrained rental housing markets. Several studies have estimated the effect of immigration on rents, Saiz (2006), Susin (2001), and Greulich, Quigley, and Raphael (2004) all found evidence that immigrant inflows increases rents. Greulich, Quigley, and Raphael (2004) found that natives experience a commensurate increase in incomes, however, it is such that their rent burden is relatively unchanged.

Exhibit 9

Real Rents by Region

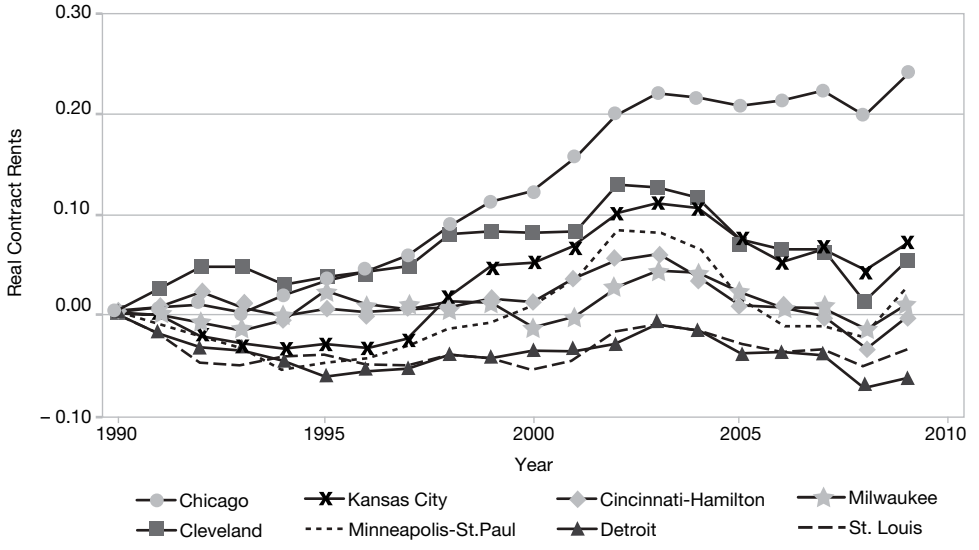


Source: Consumer Price Index (Rent Index/Less Shelter Index), 1990–2010

[4] Anchorage, Alaska, is excluded because it is nearly twice as small as the next smallest metropolitan area in the analysis. Local CPIs for Phoenix, Arizona, and Washington, DC, were not published in 1990, so they are excluded from this part of the analysis.

Exhibit 10

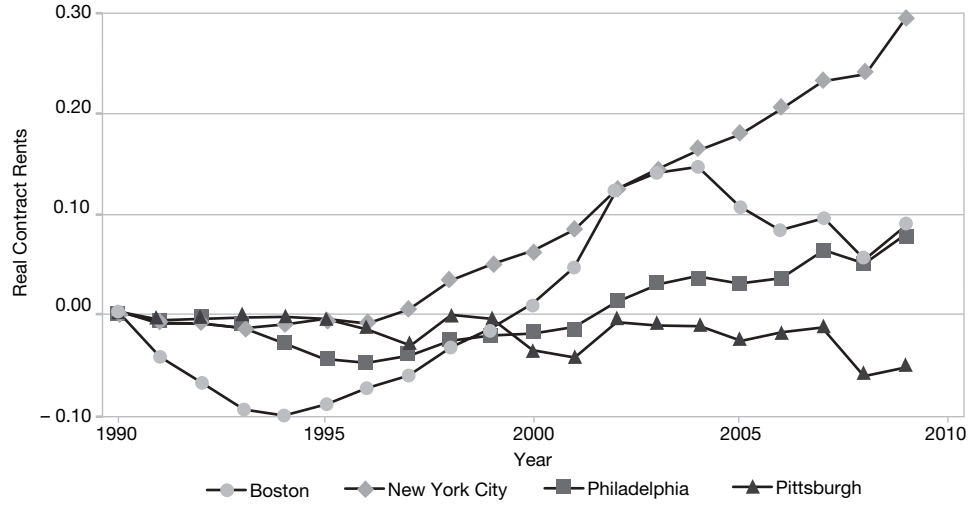
Midwest: Rents by Metropolitan Area



Source: Consumer Price Index (Rent Index/Less Shelter Index), 1990–2009

Exhibit 11

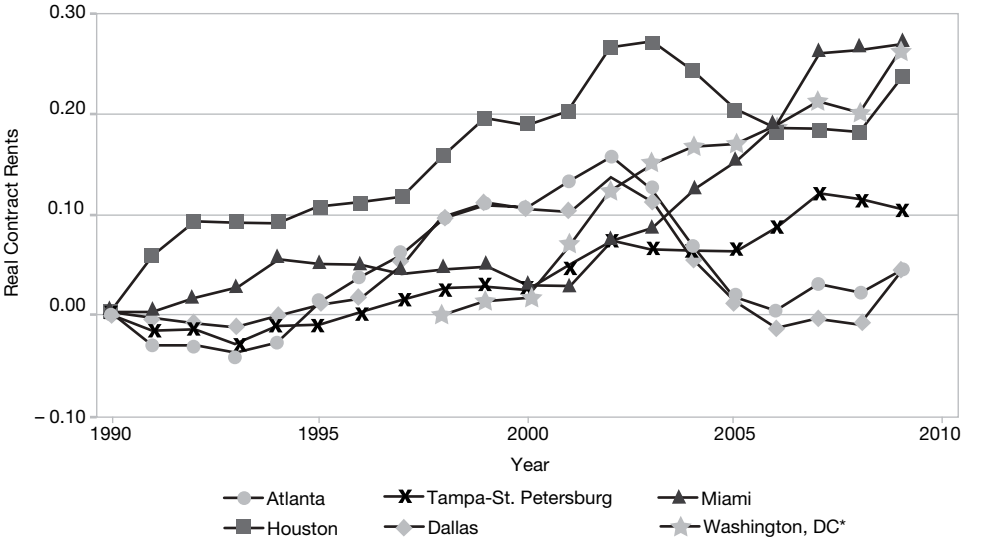
Northeast: Rents by Metropolitan Area



Source: Consumer Price Index (Rent Index/Less Shelter Index), 1990–2009

Exhibit 12

South: Rents by Metropolitan Area

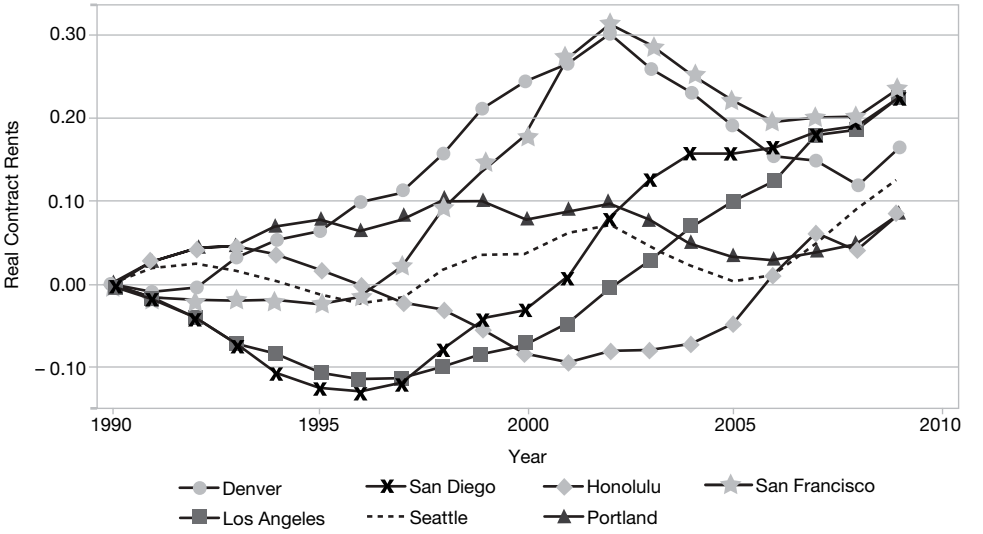


** Washington, DC needed to be excluded prior to 1996 because the Bureau of Labor Statistics did not publish local Consumer Price Indexes (CPIs) for this metropolitan area going back to 1990.*

Source: CPI (Rent Index/Less Shelter Index), 1990–2009

Exhibit 13

West: Rents by Metropolitan Area



Source: Consumer Price Index (Rent Index/Less Shelter Index), 1990–2009

Glaeser and Gyourko (2008) have demonstrated the important role that housing supply elasticity plays in the volatility of rental housing cost. In housing markets with inelastic housing supply, the housing stock is unable to accommodate growth in demand without significant upward pressure on rents. This is particularly evident in coastal metropolitan areas such as San Francisco, California, and New York, New York, and in both San Diego and Los Angeles, California, in which regulatory constraints and limited developable land hinder rental housing stock growth (through new construction or additional density), and contribute to rising rents (Glaeser and Gyourko, 2008).

Rents Since 2007

In general, trends in the rental housing market tend to track broader trends in the macroeconomy. Rental housing demand is very fungible due to the significant young household segment that has more housing flexibility than the established family household segment. With significant job losses beginning in 2008 and rising unemployment rates among the young, rental housing demand contracted, which caused vacancy rates to rise. For the most part, this rising vacancy rate was a function of plummeting demand, and not a function of rental housing overbuilding. Painter (2010) finds evidence that new household formation reached recent historic lows during the recession.

Although widespread job losses created downward pressure on rents, different rental housing markets experienced very different stresses. A closer look at rents from 2007 through 2010 is provided in appendix A. In 14 of 26 metropolitan areas real rents fell from the 2007 to through 2010. In housing markets hard hit by foreclosures (such as Phoenix, Arizona, and Tampa, Florida), rents fell by a significant 6- to 8-percent range. Even with the prevailing softness in the rental housing market, real rents were up modestly through 2010 in 12 of 26 metropolitan areas—with New York, New York; Washington, District of Columbia; and Seattle, Washington experiencing the largest rent increases. Unfortunately, rent levels reported in the CPI Housing Vacancy Survey are not effective rent (rent net of concessions) levels, so discounts provided to tenants are likely not reflected in these data. High vacancy rates and stalled rent growth tend to ease rental housing affordability stresses (if they are not offset by significant income declines), but create challenges for property owners, particularly those operating relatively affordable unsubsidized rental units. Weakening housing market fundamentals, falling home values, and increasing numbers of foreclosures could potentially reduce the supply of affordable rental housing. The next section explores the dynamics of affordable rental housing stock segments.

Affordable Rental Housing Stock Trends

This section examines the dynamics of the rental housing stock during the recession in the context of affordability. The central question is; what happened to the affordable rental housing stock segment from 2007 and 2009? The analysis in this section relies on the 2007 and 2009 American Housing Survey (AHS) and the 2007 and 2009 ACS to explore dynamics in the affordable rental housing market segments during a period of downturn. Although the AHS National Sample does not allow for the granularity to conduct metropolitan level analysis consistently, it has the benefit of being longitudinal and nationally representative, so it is possible to track the how the affordability of a given sample of rental housing units changes over time and estimate the magnitude of these changes for the rental housing market at large.

For this article, rental housing affordability is considered a function of gross rents relative to incomes.[5] In addition, rental housing affordability is examined in the context of HUD published AMIs. This approach is sensitive to heterogeneity in wages across housing markets, it allows for greater ease in historical comparisons, and it aligns with HUD program rules. Using the 2007 and 2009 AHSs, rental housing units were categorized according to affordability based on the rent level relative to AMI levels that are consistent with HUD's Housing Affordability Data Systems (HADS). Rental housing units are categorized at different percentages of AMI by the ratio of gross rent to the monthly AMI, housing units renting for less than 30 percent of the particular percentage of AMI threshold are considered affordable. For example:

$$\text{30 percent AMI Affordable Unit} = \begin{cases} \text{Yes if Gross Rent} \leq 30\,\%\, AMI * (3/10) * (1/12) \\ \text{No if Gross Rent} > 30\,\%\, AMI * (3/10) * (1/12) \end{cases}$$

30–50 percent AMI Affordable Unit =

$$\begin{cases} \text{Yes if Gross Rent} > 30\,\%\, AMI * \left(\frac{3}{10}\right) * \left(\frac{1}{12}\right) \text{AND Gross Rent} \leq 50\,\%\, AMI * \left(\frac{3}{10}\right) * \left(\frac{1}{12}\right) \\ \text{No if Gross Rent} > 50\,\%\, AMI * \left(\frac{3}{10}\right) * \left(\frac{1}{12}\right) \text{OR} < 30\,\%\, AMI * \left(\frac{3}{10}\right) * \left(\frac{1}{12}\right) \end{cases}$$

Vacant housing units that are for rent or rented, but not occupied, are assigned a utility payment through a hot deck allocation based on Census Division, structure type (mobile homes, single family, or multifamily), and number of bedrooms.[6] The rental housing affordability level is adjusted using the standard bedroom adjustment that is applied for HUD sponsored programs.[7] This analysis uses six mutually exclusive categories of rental housing affordability:

1. Extremely Low-Rent Unit: (Unsubsidized) Gross rent affordable to households at 30 percent of AMI.
2. Very Low-Rent Unit: (Unsubsidized) Gross rent affordable only to households at 50 percent of AMI.
3. Low- to Moderate-Rent Unit: (Unsubsidized) Gross rent affordable only to households at 80 percent of AMI.
4. Moderate- to High-Rent Unit: (Unsubsidized) Gross rent affordable only to households at 120 percent of AMI.
5. Extremely High-Rent Unit: (Unsubsidized) Gross rent affordable only to households above 120 percent of AMI.

[5] Although no consensus has been reached regarding how to measure affordability, convention among government officials, mortgage lenders, and property managers has been to gauge affordability based on rent-to-income ratios. Glaeser and Gyourko (2008) have suggested an alternate standard based on the convergence (or divergence) of marginal cost (construction cost) and price. This approach is subject to significant measurement challenges for rental housing because new rental production is low and variation in operating expenses is difficult to capture empirically. Similarly, some in academia have advocated for a residual income approach to measuring housing affordability; this is a desirable approach, but some data limitations present a challenge to adopting such a measure.

[6] Hotdeck imputation randomly selects a value for missing variables among similar cases with no missing variables. This method preserves the distribution of the variable. In this instance, utility payments are allocated based on structure type, number of bedrooms, tenure, and census division using the hotdeckvar command in Stata. See appendix exhibit A-2 for details.

[7] See appendix exhibit A-1 for the bedroom number adjustments.

6. Nonmarket-Rent Unit: (Subsidized) Units self-reporting rental housing assistance, with no cash rent, or rent < $5 per month.[8]

Although the total rental housing stock grew from 2007 to 2009, the number of rental units in the three most affordable rental housing stock segments actually shrunk (exhibit 14). The number of unsubsidized rental housing units that are affordable to households earning less than 30 percent of AMI decreased by an estimated 650,000 units. The number of nonmarket rent units—those reporting subsidy or offering de minimis rents—decreased by approximately 522,000. The number of very low-rent units also decreased; however, this reduction was not statistically significant. Contrasting the contraction of the lowest rental housing stock segments was an apparent swelling of the moderate rent units. Rental housing units that are affordable to renters at 80 percent of AMI grew by more than 1.2 million units, and the number of rental housing units affordable at 120 percent of AMI increased by nearly 600,000 units—both statistically significant increases.

These results are surprising; at a time of prevailing downward pressure on rents from rising vacancy rates, the AHS shows a shrinking of the most affordable rental housing stock segments. Given the AHS results run counter to industry expectations, it is worth examining whether similar trends could be detected in other data sources, such as the ACS. The AHS and ACS differ in several important ways: different sample timeframes, different collection design, different response methods, and different survey instruments, to name just a few. Perhaps most importantly, the ACS and AHS tend to differ in tenure, occupancy, and vacancy counts. According to the Census Bureau, occupancy, tenure, and vacancy counts will differ in the AHS and ACS primarily due to the 3-month data collection period used in the ACS (Schwartz, 2009). Whereas the assessment of vacancy rates in the AHS is made at the point of initial interview, the ACS assesses vacancy rates in the final month of a 3-month collection period, which means that rental housing units may be reoccupied within that 3-month window (Schwartz, 2009). This explains, in part, why occupied ACS rental housing unit counts are higher than AHS rates. Also the AHS is purposively tied to the CPS Housing Vacancy Survey (HVS), such that tabulations of ownership and vacancy rates converge with those estimates. The AHS is longitudinal but the ACS is a repeated cross-section. Both surveys are

Exhibit 14

Estimate of Rental Housing Stock Change American Housing Survey, 2007 and 2009

(Affordability Range % of AMI)	Rental Housing Units in 2007	Rental Housing Units in 2009	Change
Nonmarket rent	8,198,000	7,676,000	– 522,000*
Extremely low rent (0–30%)	2,262,000	1,612,000	– 650,000*
Very low rent (30–50%)	9,460,000	9,326,000	– 134,000
Low to moderate rent (50–80%)	13,941,000	15,200,000	1,259,000*
Moderate to high rent (80–120%)	4,275,000	4,872,000	597,000*
Extremely high rent (>120%)	1,190,000	1,074,000	– 116,000
Total	39,326,000	39,760,000	434,000

AMI = Area Median Income.

**Statistically significant at the 5-percent significance level.*

Source: Census Bureau, American Housing Survey, 2007 and 2009

[8] Although efforts have been made to improve rental-assistance reporting in the AHS, historically it has been shown to be unreliable (Shroder, 1996).

nationally representative, however: the AHS representative of U.S. housing stock, and the ACS representative of U.S. population and household statistics. In addition, both surveys collect data on household income and both contract and gross rent levels, which makes both surveys suitable for use in a rental housing affordability analysis. The advantages of the AHS are the detailed housing variables (including questions about rent subsidies) and its longitudinal design. The ACS is the key resource for local data on demographic and economic characteristics, and has the advantage of very large sample sizes (more than 20 times as large as the AHS) and it is conducted annually (opposed to biannually as with the AHS).

Although the AHS microdata files include data on local HUD income limits, the ACS microdata contains no such information. Developing a comparable file requires adding in additional income limit data. IPUMS provides geographic identifiers for a number of metropolitan areas based on 2000 Census Geography. Using the ACS microdata from IPUMS along with HUD published income limits from 2007 and 2009, it is possible to construct a data file with the rental housing affordability variables found in the AHS Housing Affordability Data Systems (HADS) files that were originally developed for the Millennial Housing Commission. Constructing these HADS ACS files allows for greater comparability with previous HUD housing affordability research and consistency with HUD program definitions and regulations.

With a few exceptions, HUD income limits are unique to counties and metropolitan areas. The county identifiers in the IPUMS data enable easy matching of HUD income limits to the microdata observations for counties that collectively contain nearly 70 percent of U.S. households. The implication is that it is possible to construct a data file that applies the most granular income limit data to a significant majority of sample observations using publicly available microdata. For the remainder of observations, HUD's state-level income limits are applied to the sample rental housing units. Renters are categorized based on their income relative to the HUD AMI with adjustments for household size.[9] Rental housing units are categorized based on the same HUD-published income limits, except in rural areas where the AHS may have the exact county-specific income limits, and the ACS file features the state income. The same bedroom- and person-size adjustments are made for the ACS data as are made in the AHS HADS data. Also the imputation of utilities in vacant rental housing units is similar in both (see appendix B for details).

Initial tabulations of the renter population by income category suggest that the 2007 and 2009 ACS and the 2007 and 2009 AHS yield similar national estimates. Exhibit 15 shows the estimate of renter households earning less than 30 percent of AMI, 30 to 50 percent of AMI, and 50 to 80 percent of AMI. With the exception of the low-income count in 2009, the ACS and AHS counts generally differ by 1 to 3 percent.

This result is encouraging; it affirms that the number of renter households with incomes less than 30 percent of AMI and between 30 and 50 percent of AMI increased amidst the worst economic downturn in recent history. Trend differences within the housing stock are larger, however. Because the ACS does not ask about rental housing assistance, it is not possible to compare the nonmarket rent category. Therefore, nonmarket rental housing units are included in both ACS and AHS tabulations

[9] See appendix exhibit A-1 for the household size adjustments.

in exhibit 15 for ease of comparison. These nonmarket rental housing units are categorized based on gross rent, noncash rental housing units are captured in the extremely low-rent category, and rental housing units reporting subsidy are placed in the appropriate rental housing affordability category. Exhibit 16 shows comparison between the 2007 and 2009 ACS and AHS rental housing unit counts by affordability category.

The difference in the estimates of the rental housing stock that was affordable to households at 30 percent of AMI in 2007 is only about 6 percent between the two samples—but the estimated percentage of units with rents above the 30 percent of AMI affordable rent, but at or below the 50 percent of AMI rent, is roughly 20 percent. As noted earlier, the different data collection periods for categorizing rental housing units as vacant or occupied create differences in counts between the AHS and ACS. The estimated trends for the 30 percent of AMI affordable rental housing units and 30 to 50 percent of AMI affordable rental housing units, however, are considerably different across the two samples. Although the AHS shows a contraction in the size of both rental housing stock segments totaling more than 1.1 million units, the ACS show an expansion of these segments

Exhibit 15

Renter Households by Income Category

	ACS			AHS		
	< 30% AMI	30–50% AMI	50–80% AMI	< 30% AMI	30–50% AMI	50–80% AMI
2007	9,452,000 (35,686)	6,713,000 (31,500)	7,724,000 (33,480)	9,594,000 (165,571)	6,723,000 (140,742)	7,635,000 (148,972)
2009	10,600,000 (37,339)	7,241,000 (32,334)	8,004,000 (33,888)	10,300,000 (162,833)	7,158,000 (138,214)	7,173,000 (140,167)

ACS = American Community Survey. AHS = American Housing Survey. AMI = Area Median Income.
Sources: AHS, 2007 and 2009; ACS, Integrated Public Use Microdata Series, 2007 and 2009

Exhibit 16

AHS/ACS Rental Housing Stock Comparison (counts)

ACS	Rent Affordable % of AMI		
	30%	30–50%	50–80%
2007	7,769,000 (32,642)	9,045,000 (36,250)	16,613,000 (42,242)
2009	7,871,000 (32,659)	9,479,000 (36,800)	18,000,000 (43,190)
Change, 2007–2009	102,000	434,000	1,387,000
AHS	**Rent Affordable % of AMI**		
	30%	30–50%	50–80%
2007	7,351,000 (147,695)	11,100,000 (173,672)	15,080,000 (199,527)
2009	6,272,000 (128,566)	10,952,000 (167,024)	16,229,000 (196,337)
Change, 2007–2009	– 1,079,000	– 148,000	1,148,000

ACS = American Community Survey. AHS = American Housing Survey. AMI = Area Median Income.
Sources: AHS, 2007 and 2009; ACS, Integrated Public Use Microdata Series, 2007 and 2009

by roughly 0.5 million units. Both samples suggest an increase in the moderately affordable rental housing stock (50 to 80 percent of AMI) of nearly 1 million units. Although the ACS shows increases in the size of the affordable rental housing stock, this appears primarily driven by an overall increase in the total rental housing stock. Exhibit 17 shows the share of affordable rental housing units within the total rental housing stock. As a percentage of the total rental housing stock, the number of 30 percent of AMI and 30 to 50 percent of AMI affordable units actually decreased. Percentages are arguably less useful if the concern is rental housing affordability, because additional affordable rental housing supply should ease overall affordability stresses regardless of its share of the overall distribution.

Due to the timing differences in the assessment of vacancy status, the differences in counts are not surprising. Still somewhat puzzling, however, is that trends in the affordable rental housing stock segments are so different. Although the differences in occupancy and vacancy rates can explain why levels diverge, this does not explain the direction of the change in rental housing affordability. One possible theory is that the 3-month period of data collection in the ACS allowed for the reoccupancy of vacant rental housing units at rents lower than initial asking rents, which could have contributed to increased rental housing affordability.

Exhibit 17

ACS/AHS Rental Housing Stock Comparison (percent)

ACS	Rent Affordable % of AMI		
	30%	30–50%	50–80%
2007	0.191	0.222	0.409
	(0.0008)	(0.0009)	(0.0010)
2009	0.184	0.221	0.420
	(0.0008)	(0.0009)	(0.0010)
Change, 2007–2009	– 0.007	– 0.001	0.011
AHS	**Rent Affordable % of AMI**		
	30%	**30–50%**	**50–80%**
2007	0.187	0.282	0.383
	0.0035	(0.0039)	(0.0043)
2009	0.158	0.276	0.408
	(0.0030)	(0.0037)	(0.0041)
Change, 2007–2009	– 0.029	– 0.007	0.025

ACS = American Community Survey. AHS = American Housing Survey. AMI = Area Median Income.
Sources: AHS, 2007 and 2009; ACS, Integrated Public Use Microdata Series, 2007 and 2009

Summary

From 2007 to 2009, the ACS and AHS show large growth in the number of affordable rental housing units for renters with low- to moderate-incomes (affordable to households at 80 percent of AMI), and substantial increases in the number of extremely low-income renters. For the most affordable rental housing stock segments the data is mixed. During a period of rising rental housing vacancy rates, the AHS suggests a shrinking of the affordable rental housing stock. Categorizing rental housing units based on rents relative to local incomes, means that falling incomes could reduce the

local rental housing affordability threshold causing the number of units appearing as unaffordable to increase without a commensurate increase in rents. Appendix C explores the sources of the AHS increase in rental housing affordability, and suggests that the loss of affordability was largely driven by rent increases. The conflicting rental housing affordability trends in the ACS and AHS cannot be easily explained. Important differences in the assessment of occupancy and vacancy rates between the two surveys complicate comparisons. The inconsistency in trends across data sources underscores the need for more robust and granular data on rental housing, and additional public guidance from the Census Bureau regarding comparisons of housing estimates across surveys.

Affordable Supply Gap and Rent Burdens

This section examines rental housing affordability using two approaches: the affordable rental housing supply gap and changes in household rent burdens. The first subsection describes the affordable rental housing supply gap at the national level before and during the recession, the second subsection estimates the supply gap at the metropolitan level, and the final section explores the change in rent burden for low-income renters.

Affordable Supply Gap at the National Level

To provide a more complete picture of rental housing affordability at both a national and metropolitan level, the analysis relies heavily on the Census Bureau's ACS PUMS. Relatively few representative data sources exist that allow for national and cross-metropolitan comparisons of renter incomes and rents. With the introduction of the ACS and IPUMS data from the Minnesota Population Center, it is possible to analyze cross-sectional differences in rental housing market conditions across large metropolitan areas because of the robust sample sizes.

Exhibit 18 shows the national estimates based on 2007 ACS microdata. The affordable supply gap variables are in the last two rows. The ACS tabulations suggest that under optimal sorting—where all the lowest rent units are filled with the lowest income renters—roughly 82 affordable rental housing units exist for households at 30 percent of AMI for every 100 renter households that were at or below 30 percent of AMI. This method may understate the severity of rental housing affordability, because units are classified as affordable if they have gross rents affordable at the top of each income threshold. Furthermore, optimal sorting is only a conceptual construct; an extremely low-rent

Exhibit 18

ACS Rental Housing Affordability, 2007

	30% AMI	30–50% AMI	50–80% AMI
Affordable unit	7,770,000	9,050,000	16,600,000
Affordable and available unit	4,090,000	5,090,000	10,800,000
Vacant	495,000	966,000	1,580,000
Vacancy rate	6.37%	10.67%	9.52%
Renters	9,450,000	6,710,000	7,720,000
Affordable per 100 renters	82	135	215
Affordable and available per 100 renters	43	76	140

ACS = American Community Survey. AMI = Area Median Income.

Source: ACS, Integrated Public Use Microdata Series, 2007

unit in rural Arkansas is not a reasonable housing option for an extremely low-income household in San Francisco. In addition, higher income households are more likely to be selected over lower income tenants when competing for the same affordable unit, so affordable units occupied by higher income households may not be truly available to low-income households. When the availability dimension is applied—where available is defined as vacant or occupied by a household at or below the income threshold—only 43 affordable and available rental housing units exist per 100 extremely low-income renters (30 percent of AMI). Rental housing units with rents affordable at 30 percent of AMI have such low contract rents that the amount is likely to narrowly cover the landlord's operating expenses in many housing markets, which requires a significant share of the rents to be subsidized. Although it is not possible to identify rental assistance in the ACS data, tabulations of the 2007 AHS find that 35 percent of rental housing units at this affordability level are subsidized. For renter households earning 30 to 50 percent of AMI, only 76 affordable and available rental housing units exist per 100 renters. Renter households at 80 percent of AMI have far more affordable rental options, but this analysis does not capture the physical adequacy or the neighborhood quality associated with these affordable rental housing units.

Exhibit 19 shows the tabulations from the 2009 survey. The effect of the recession on the income of renters is clear. From 2007 to 2009, the number of renter households reporting incomes below 30 percent of AMI increased by more than 1 million households, and the number of household reporting incomes between 30 to 50 percent of AMI increased by another 0.5 million households. ACS estimates suggest that the most affordable rental housing stock segment—extremely low-rent units—grew modestly. This growth was more than offset by the swelling ranks of extremely low-income renters, however. As a result, only 41 affordable and available extremely low-rent units existed per 100 extremely low-income renters in 2009. The number of very low-rent units, affordable at 50 percent of AMI grew slightly, but was offset by the increase in renters with income less than 50 percent of AMI. The overall increase in low-income households had the effect of increasing the availability of very low-rent units, thus reducing the affordable and available supply gap to 78 rental housing units per 100 renters. Substantial additions of low- to moderate-rent rental housing units eased the burden for households at 80 percent of AMI.

Exhibit 19

ACS Rental Housing Affordability, 2009

	30% AMI	30–50% AMI	50–80% AMI
Affordable unit	7,870,000	9,480,000	18,000,000
Affordable and available unit	4,300,000	5,620,000	12,200,000
Vacant	480,000	1,010,000	1,910,000
Vacancy rate	6.13%	10.70%	10.62%
Renters	10,600,000	7,240,000	8,000,000
Affordable per 100 renters	74	131	225
Affordable and available per 100 renters	41	78	152

ACS = American Community Survey. AMI = Area Median Income.

Source: ACS, Integrated Public Use Microdata Series, 2009

Affordable Supply Gap at the Metropolitan Level

The divergent trends in rents described in the Rent Trends section should lead to different rental housing affordability levels at the subnational level. The results of the metropolitan level analysis appear in exhibit 20. Some of the metropolitan areas listed are not fully identified in the public use microdata; as a result, population estimates are slightly lower when using the PUMS data than published census estimates. In addition, with a single-year sample, a nontrivial amount of sampling error exists.

The exhibit focuses on two levels of incomes and rents, households earning at or below (and units affordable at) 30 percent of AMI, and households earning between 30 and 50 percent of AMI (and units affordable at 50 percent of AMI). As with the national level analysis, this metropolitan level analysis reveals that in every housing market too few rental housing units exist that have rents that are affordable to extremely low-income households. This is not to suggest that every housing market needs more housing—a look at the vacancy rates confirms that some markets have more than adequate supply—rather it indicates that the number of households with incomes too low to affordably support local rents far exceeds the few rental housing units with rents affordable to this group. If a goal of housing policy is to ensure that low-income households do not expend enormous shares of their budget towards housing, then additional rental assistance is needed to affordably house these families.

For renter households that are very low-income (30 to 50 percent of AMI), but not likely to be living below the poverty line, the picture is more nuanced. Some housing markets exhibit significant rental housing affordability stresses for households at 50 percent of AMI. Miami, Florida; San Diego, California; Boston, Massachusetts; New York, New York; Los Angeles, California; Tampa, Florida; and Honolulu, Hawaii are extremely tough places to find affordable units at 50 percent of AMI with fewer than 50 units per 100 renters. Several of these cities have significant rental housing supply constraints because the amount of developable land is limited or because of the presence of regulatory barriers, which keep vacancy rates low and create upward pressure on rents (Glaeser and Gyourko, 2008). In several Midwest cities where housing values are low, land is cheap, and the population has shrunk, an apparent surplus of rental housing units that are affordable to households at 50 percent of AMI exists. In these more affordable metropolitan areas, the estimated vacancy rate for units with rents affordable at 50 percent of AMI exceeds 11 percent in each of the metropolitan areas (except Minneapolis) suggesting an adequate supply of affordable rental housing for households earning 50 percent of AMI. These housing markets are where rehabilitation and tenant-based rental assistance may be a more market sensitive intervention than additional new construction. It is important to note that this analysis does not parse out substandard rental housing units, and does not incorporate the geographic distribution of these units within a metropolitan area. For instance, an affordable rental housing unit in a high-poverty central city neighborhood would be classified as available and affordable even if the renter is in a distant suburb.

Exhibit 20

Rental Housing Affordability by Metropolitan Area (1 of 2)

Metropolitan Area	30 % AMI				30–50 % AMI				0–50 % AMI	
	Affordable Units	Affordable and Available Units	Renter House-holds	Affordable and Available Units Per 100 Renter Households	Affordable Units	Affordable and Available Units	Renter House-holds	Affordable and Available Units Per 100 Renter Households	Affordable Rental Vacancy Rate (%)	Total Rental Vacancy Rate (%)
Atlanta, GA*	62,000	37,000	124,000	30	144,000	90,000	105,000	85	17.7	15.4
Boston, MA-NH	131,000	87,000	163,000	53	73,000	43,000	89,000	49	5.0	6.8
Chicago, IL*	172,000	111,000	306,000	36	289,000	173,000	184,000	94	8.6	9.8
Cincinnati, OH-KY-IN*	62000	35000	57000	62	71000	41000	37000	111	13.8	12.7
Cleveland, OH	63,000	36,000	84,000	43	99,000	56,000	53,000	106	11.8	11.5
Dallas-Fort Worth, TX*	80,000	43,000	154,000	28	181,000	113,000	135,000	83	13.7	13.6
Denver-Boulder, CO*	41,000	24,000	80,000	30	81,000	48,000	54,000	90	10.3	8.9
Detroit, MI	109,000	65,000	150,000	43	166,000	108,000	79,000	136	12.1	12.9
Honolulu, HI	21,000	9,000	21,000	43	12000	7000	21000	31	2.0	5.6
Houston-Brazoria, TX	76,000	40,000	141,000	29	158,000	105,000	122,000	86	15.6	14.0
Kansas City, MO-KS*	41000	23000	51000	45	66000	34000	39000	89	12.1	11.9
Los Angeles-Long Beach, CA	213,000	124,000	501,000	25	211,000	136,000	374,000	36	3.3	6.1
Miami-Hialeah, FL*	41,000	27,000	76,000	35	17,000	11,000	60,000	17	8.1	13.1
Milwaukee, WI	32,000	19,000	58,000	32	64000	35000	41000	85	6.7	6.1
Minneapolis-St. Paul, MN*	63,000	39,000	90,000	44	119,000	65,000	57,000	115	5.3	6.9
New York-Northeastern New Jersey	544,000	333,000	798,000	42	412,000	220,000	479,000	46	4.8	6.1
Philadelphia, PA-NJ	121,000	74,000	170,000	43	144,000	87,000	100,000	87	8.2	9.8
Phoenix, AZ*	35,000	18,000	82,000	22	53,000	31,000	72,000	43	18.5	15.1
Pittsburgh, PA*	78,000	44,000	77,000	57	85,000	44,000	47,000	93	6.5	6.9
Portland, OR-WA*	27,000	15,000	57,000	26	44,000	22,000	44,000	51	3.2	6.3

Exhibit 20

Rental Housing Affordability by Metropolitan Area (2 of 2)

Metropolitan Area	30 % AMI				30–50 % AMI				0–50 % AMI	
	Affordable Units	Affordable and Available Units	Renter House-holds	Affordable and Available Units Per 100 Renter Households	Affordable Units	Affordable and Available Units	Renter House-holds	Affordable and Available Units Per 100 Renter Households	Affordable Rental Vacancy Rate (%)	Total Rental Vacancy Rate (%)
San Diego, CA	39,000	21,000	90,000	23	26,000	18,000	74,000	24	3.2	7.1
San Francisco-Oakland, CA	137,000	87,000	195,000	45	117,000	66,000	108,000	61	5.4	6.5
Seattle-Everett, WA	56,000	34,000	89,000	38	87,000	46,000	56,000	82	5.4	6.3
St. Louis, MO-IL	77,000	45,000	87,000	52	106,000	57,000	59,000	97	7.7	7.5
Tampa-St. Petersburg, FL	32,000	15,000	55,000	28	29,000	17,000	51,000	32	9.2	15.4
Washington, DC-MD-VA*	103,000	56,000	127,000	44	111,000	63,000	100,000	63	6.2	8.8

AMI = Area Median Income.

**Partially identified, counts will be 1 to 10 percent lower than full sample American Community Survey tabulations.*

Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 2007

Rent Burdens

The supply gap approach to describing affordability dynamics is useful because it directly accounts for changes in the rental housing stock, however, it may fail to capture nuances of low-income households' housing options. Important considerations such as geography or the physical adequacy of housing may further limit options to the poor. Therefore it is also critical to examine observed rent burdens. Exhibit 21 shows the trend of rent burdens from 1990 through 2009. In 2009 the median rent burden was 16.6 percent higher than in 1990. More startling, the percentage of renters paying more than one-half of their income for housing increased nearly 38 percent since 1990.

Although rental housing affordability is difficult to disentangle from economic recessionary trends, the overall level of affordability—as measured by rent burden—is quite clear. From 2007 to 2009 the number of households paying more than one-half of their income for housing (severely burdened) increased by roughly 1 million (exhibits 22 and 23). Severe rent burdens are most concentrated among renters with incomes below 30 percent of AMI. Housing decisions are typically made in relation to permanent income, rather than point-in-time income, therefore, income volatility among households reporting poverty incomes may overstate the number of households that require housing assistance. In addition, some of the severely burdened households are already receiving rental assistance, but have little or no income, and are required to pay a minimum rent. Still the trend and magnitude are significant. Even with rental housing markets exhibiting signs of softness, the dominating effect of falling incomes has placed increased strains on the household budgets of low-income renters, while the number of unassisted very low-income renter households paying more than 50 percent of their income for housing or living in substandard housing rose to 7.09 million households or 20 percent of renter households in the AHS 2009—the highest total ever recorded in the AHS (exhibits 24 and 25).

Exhibit 21

Rent Burden, 1990–2009

Year	Median Gross Rent as % of Income	Percent of Monthly Income for Housing	
		Greater Than 30%	Greater Than 50%
1990	26.4	37.24	17.66
2000	25.5	35.93	17.33
2005	29.8	45.20	23.05
2009	30.8	47.15	24.35

Sources: Census Bureau, 5-Percent Public Use Microdata Sample (PUMS), 1990, 2000; Census Bureau, American Community Survey, Integrated PUMS, 2005, 2009

Exhibit 22

American Community Survey, Rent Burden, 2007

	30% AMI	30–50% AMI	50–80% AMI
Renters	9,450,000	6,710,000	7,720,000
Rent burden 30–50 percent of income	1,410,000	3,072,000	2,729,000
Rent burden 50 percent or more of income	5,826,000	1,893,000	482,000

AMI = Area Median Income.

Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 2007

Exhibit 23

American Community Survey, Rent Burden, 2009

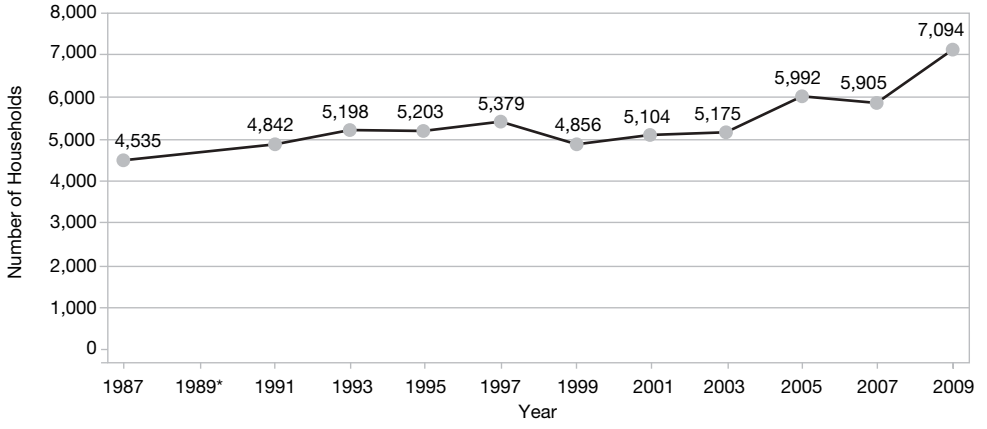
	30% AMI	30–50% AMI	50–80% AMI
Renters	10,600,000	7,240,000	8,000,000
Rent burden 30–50 percent of income	1,499,000	3,312,000	2,920,000
Rent burden 50 percent or more of income	6,700,000	2,098,000	491,000

AMI = Area Median Income.

Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 2009

Exhibit 24

Number of Unassisted Very Low-Income Renters With Severe Rent Burden or in Severely Inadequate Housing
Worst Case Housing Needs

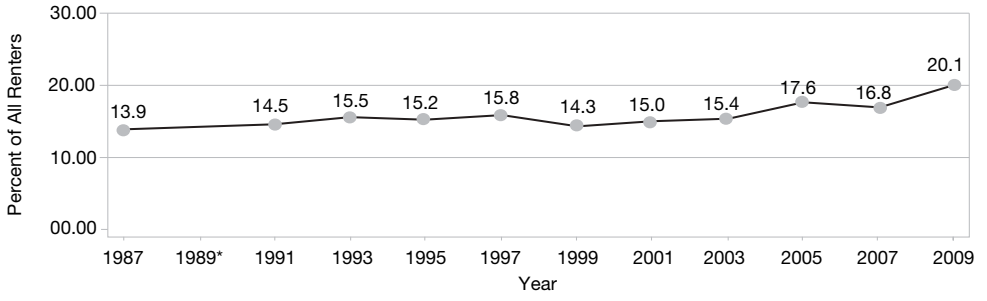


** Survey definition changes do not allow for a comparable number for 1989.*

Source: Census Bureau, American Housing Survey, 1987–2009

Exhibit 25

Percent of Unassisted Very Low-Income Renters With Severe Rent Burden or in Severely Inadequate Housing
Worst Case Housing Needs



** Survey definition changes do not allow for a comparable number for 1989.*

Source: Census Bureau, American Housing Survey, 1987–2009

Summary and Findings

This article attempted to provide an update of rental housing affordability trends and levels since 1990, including an exploration of how rental housing affordability has been affected by the recession of 2007 through 2009. In the first half of the 1990s real rents declined or were stagnant, when the economy took off in the second half of the decade real rents rose in most housing markets, but these increases were married with increasing real renter incomes, leaving rent burdens slightly lower by the end of the decade. The 2000s have been a far more trying time period for renters.

Real renter incomes declined in nearly every housing market in the first half of the 2000s, and ended the decade below 2000 levels in 25 of 25 markets in large part due to a historic recession.

Even with downward rent pressure through the recession, real rent levels ended with 2009 above 2000 levels in 19 of 26 housing markets. These trends combined to drive rent burdens to historic highs. For renters at 50 percent of AMI, rental housing affordability varies significantly across metropolitan areas.

In 2009, the number of extremely low-income renter households paying more than 50 percent of their income for housing increased to more than 6.7 million households, and only 41 affordable and available units existed per 100 extremely low-income renters.

During the recession, the moderately affordable rental housing stock with rents affordable to households at 80 percent of AMI increased sizably, but the data is less clear on the changes at the bottom of the rental housing stock.

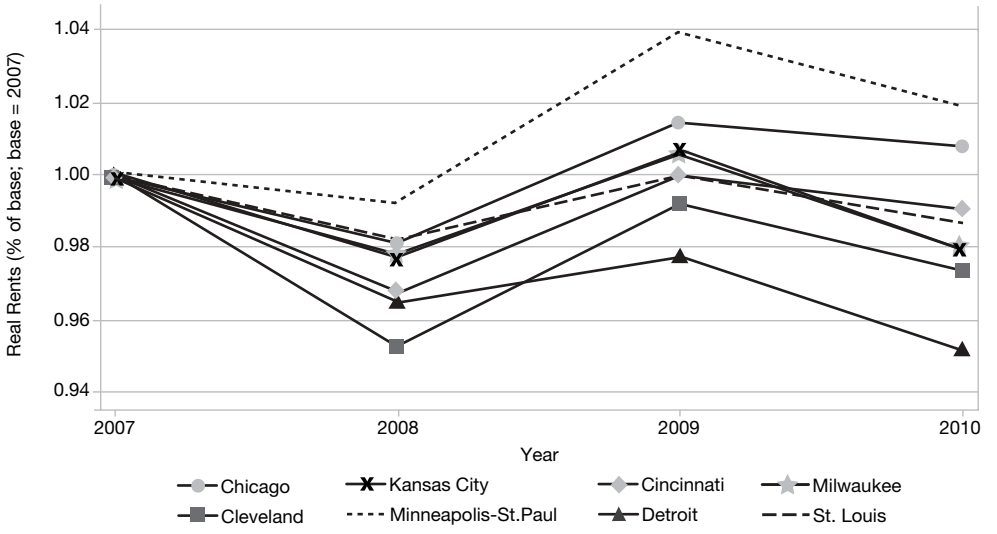
Future rent pressures will depend on the extent to which the current rental housing stock can absorb expected future demand increases for rental housing. Multifamily rental production slowed significantly during the past 2.5 years, meaning that few new rental housing completions will come online in 2011 and 2012. Given the incredible heterogeneity in rental housing affordability dynamics presented in this article, different housing markets are likely to absorb these demand changes very differently. Communities with persistently high vacancy rates, whether from elastic supply or historic population loss, should be able to accommodate future rental demand fairly easily, although communities with low vacancy rates and inelastic supply may face steep upward pressure on rents as demand increases.

Finally, although the sources of rental housing data have improved over the years, development of detailed, timely, representative data still lags the collection of ownership data. This study demonstrates that additional data is needed to understand time series dynamics in rental housing affordability. Particularly, the collection of data on rent concessions, which are the primary method of nominal rent cuts, but are rarely collected in public surveys.

Appendix A. Metropolitan Rents Since 2007

Exhibit A-1

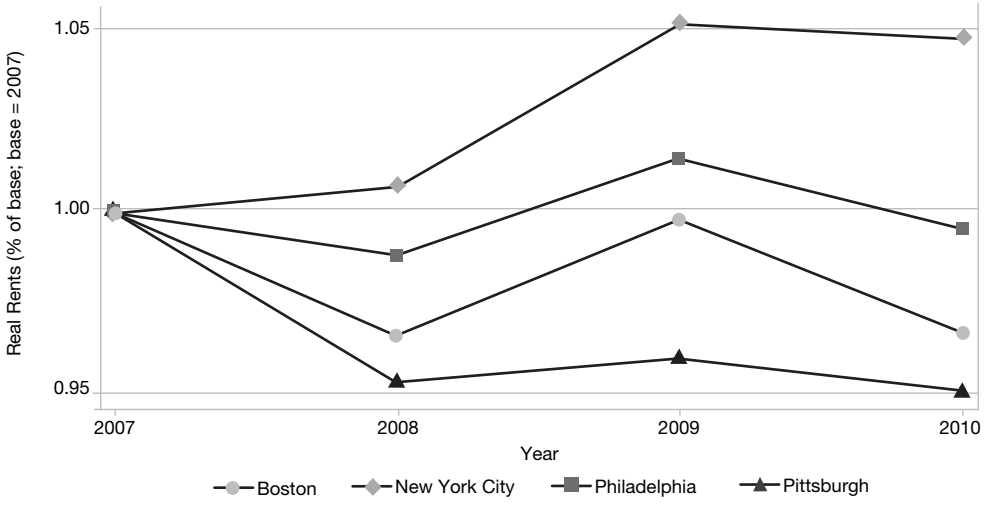
Midwest: Real Rents Since 2007 by Metropolitan Area



Source: Consumer Price Index (Rent Index/Less Shelter Index), 2007–2010

Exhibit A-2

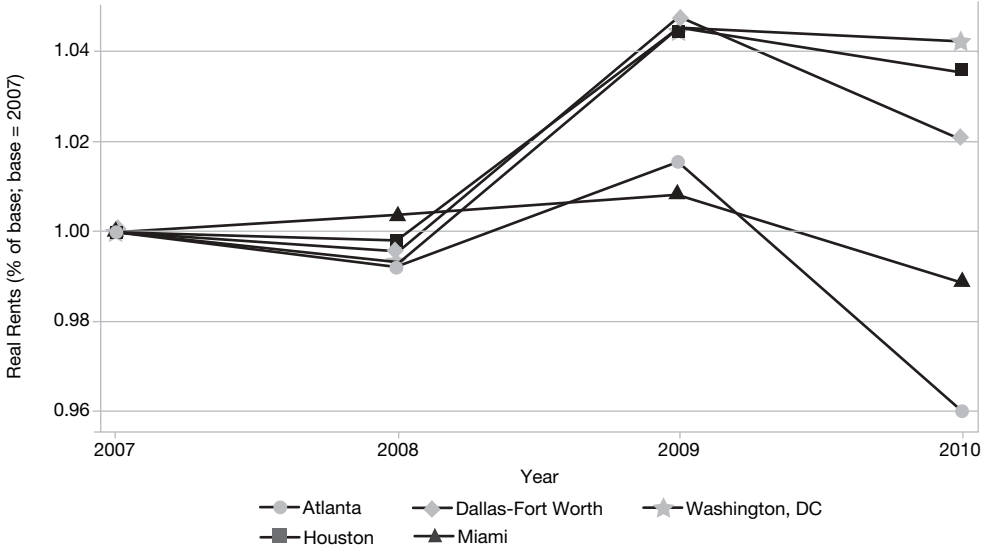
Northeast: Real Rents Since 2007 by Metropolitan Area



Source: Consumer Price Index (Rent Index/Less Shelter Index), 2007–2010

Exhibit A-3

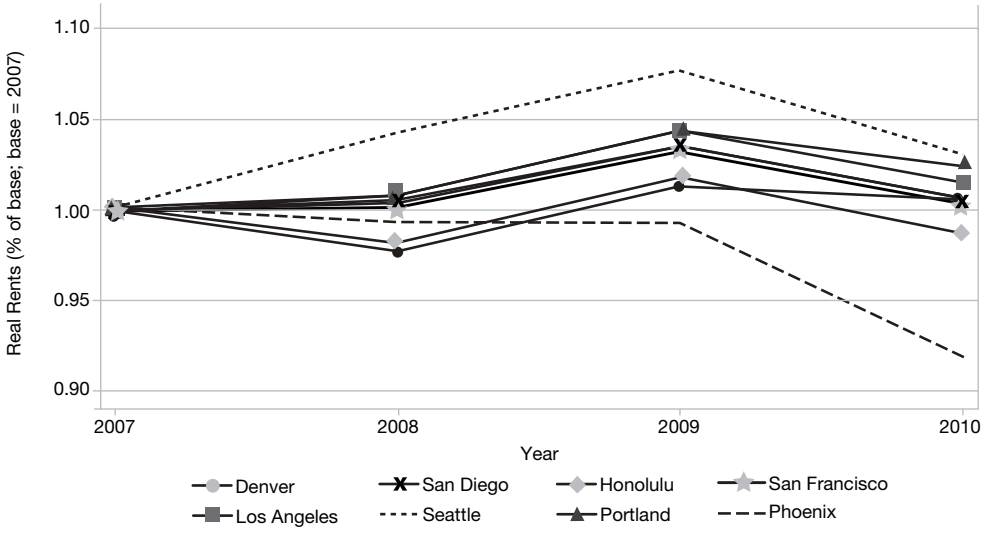
South: Real Rents Since 2007 by Metropolitan Area



Source: Consumer Price Index (Rent Index/Less Shelter Index), 2007–2010

Exhibit A-4

West: Real Rents Since 2007 by Metropolitan Area



Source: Consumer Price Index (Rent Index/Less Shelter Index), 2007–2010

Appendix B. Data Adjustments and Imputations

Exhibit B-1

Household Size and Bedroom Number Adjustments

Household Size Adjustments to Income		Number of Bedrooms Adjustments	
People (N)	Adjustment	Bedrooms (N)	Adjustment
1	0.70	0	0.70
2	0.80	1	0.75
3	0.90	2	0.90
4	1.00	3	1.04
5	0.08	4	1.16
6	1.16	5	1.28
7+	(1.16 + 0.08 [persons–6])	6	1.40
		7+	(1.40 + 0.12 [bedrooms–6])

Source: Author imputation using Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 2007

Exhibit B-2

Hotdeck Imputed Utility Comparison

ACS Utilities for Occupied Rental Units (2007)					
Mean	124.319				
Standard deviation	119.833				
Percentiles	10%	25%	50%	75%	90%
Dollar utility amount	0	40	100	180	280
ACS Imputed Utilities for Vacant Rental Units (2007)					
Mean	121.484				
Standard deviation	119.953				
Percentiles	10%	25%	50%	75%	90%
Dollar utility amount	0	40	93	170	270
ACS Imputed and Observed—Vacant and Occupied Units (2007)					
Mean	124.122				
Standard deviation	119.598				
Percentiles	10%	25%	50%	75%	90%
Dollar utility amount	0	40	100	180	280

ACS = American Community Survey.

Source: Author imputation using Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 2007

Appendix C. Exploring Rental Housing Affordability Declines AHS 2007 to 2009

To examine the extent to which falling local incomes may be driving the reduction in rental housing affordability, a decomposition of the rent distributions was constructed using a model similar to one used by Quigley and Raphael (2004). The basic formula for the composition follows:

$$\begin{aligned} &CDF\ Rents\ 2009 - CDF\ Rents\ 2007 \\ &\quad = [CDF(Rents\ 2009)_{Incomes\ 2009} - CDF(Rents\ 2007)_{Incomes\ 2009}] \\ &\quad - [CDF(Rents\ 2007)_{Incomes\ 2007} - CDF(Rents\ 2007)_{Incomes\ 2009}] \end{aligned}$$

where the overall change in the percentage of rental housing units that are affordable to renters at the income threshold can be decomposed into the first term: the cumulative distribution function (CDF) of the 2009 rent distribution evaluated at the 2009 income limits less the 2007 rent distribution also evaluated at the 2009 income limits provides the percentage change in rental housing affordability due to changing rents, and the second term is the CDF of 2007 rent distribution evaluated at the 2007 income levels less the CDF of 2007 rents evaluated at the 2009 income level—interpreted as the change in rental housing affordability due to changing income. The first term is operationalized with an estimate of the portion of rental housing units in 2009 with rents below the 2009 income threshold, minus the portion of rental housing units in 2009 with rents below the 2007 income threshold. All rents and the rental housing affordability income thresholds are adjusted to be in constant 2009 dollars. This analysis requires having a specified income limit for each rental housing unit, so only units that existed in both 2007 and 2009 could be included. The slightly narrowed samples represent roughly 34 million rental housing units in 2007 and 32 million units in 2009 (this difference arises primarily to sample adjustment in 2009). HUD is required to publish income limits annually by a specified date, which does not allow for use of the most up-to-date data. The 2009 income limits are in fact based on 2007 data with adjustments for inflation, so income limits have not fallen commensurate with the real income declines. This is apparent in the data, with 71 percent of the sample rental housing units that were rented in either 2007 or 2009 being located in local jurisdictions where the AMI increased in real terms from 2007 to2009. Exhibit C-1 displays the results of the decomposition above.

The decomposition reveals that for low-income renter households, rental housing affordability worsened between 2007 and 2009, and the reduction in affordability appears driven by increases in reported gross rents. Exhibit C-2 shows the percentage of rental housing units that were affordable in 2007, but changed affordability status in 2009 and experienced either a real rent increase or decrease from 2007 to 2009. About 93 percent of the sample units were affordable at 30 percent of AMI in 2007. These same units were not affordable at 30 percent of AMI in 2009 because of increases in real rents. These increases also suggest that changes in rental housing affordability shown in the AHS between 2007 and 2009 were driven primarily by rent increases.

Exhibit C-1

Rental Housing Affordability Change Decomposition by Income Threshold, 2007–2009

2007 to 2009	Overall	Due to Rents	Due to Income
30% AMI	– 2.62%	– 2.71%	0.08%
50% AMI	– 2.53%	– 3.53%	1.00%
80% AMI	0.00%	– 1.58%	1.59%
100% AMI	0.54%	0.03%	0.51%

AMI = Area Median Income.

Source: Census Bureau, American Community Survey, Integrated Public Use Microdata Series, 2007 and 2009

Exhibit C-2

Affordable Units in 2007 That Changed Rental Housing Affordability Status in 2009*

	Reported Rent Change (in 2009 dollars)	
	Decrease (%)	Increase (%)
Affordable at 30% AMI	6.59	93.41
Affordable at 50% AMI	22.56	77.44
Nonmarket units	28.00	72.00

AMI = Area Median Income.

** Percent of unweighted sample housing units that were rental units in 2007 and 2009 that fell out of their 2007 affordability status.*

Source: Census Bureau, American Housing Survey, 2007 and 2009

Longitudinal Estimates of Rental Housing Stock Changes, AHS 2007 to 2009

This appendix features estimates of the movements of rental housing units between affordability categories and to and from other rental housing stock segments (that is, owned, vacant, and so on) using estimated longitudinal weights for 2007 through 2009 following an approach taken in the HUD Components of Inventory Change (CINCH) reports. This analysis suggests that 1.1 million extremely low-rent units in 2007 moved to a less affordable category, which was only partially offset by 700,000 rental housing units moving into the extremely low-rent category from higher rent categories. The other primary source of this loss is the movement of rental units either to ownership or a permanent loss category. Roughly 400,000 extremely low-rent units in 2007 were either lost or moved to owner-occupied units, which was only partially recouped through 240,000 new rental units.

Exhibit C-3 presents estimates of the change in the rental housing stock by affordability category. The changes are separated into a forward-looking component and backward-looking component. A description of the weighting methodology is provided in text that follows. Note that when adjusting the weights, the 2007 and 2009 data no longer perfectly mirror the cross sectional analysis. See description of the weighting methodology following exhibit C-3.

Exhibit C-3

Sources of Rental Housing Stock Changes, 2007–2009

	In 2007	Forward-Looking Component			Backward-Looking Component			Net	In 2009
		To More Affordable	To Less Affordable	Loss of Rental Housing Stock	From Less Affordable	From more Affordable	Additions to Rental Housing Stock		
Nonmarket unit	8,243		(2,763)	(946)	2,311		981	(418)	7,825
Extremely low-rent unit	2,242	(240)	(1,230)	(400)	720	225	243	(682)	1,559
Very low-rent unit	9,192	(946)	(2,482)	(950)	2,159	1,263	1,084	127	9,320
Low- to moderate-rent unit	13,800	(3,254)	(940)	(1,206)	1,302	3,685	1,828	1,414	15,214
High-rent unit	4,348	(1,825)	(107)	(476)	237	1,602	1,011	443	4,791
Extremely high-rent unit	1,259	(566)		(209)		409	244	(121)	1,138

Source: Census Bureau, American Housing Survey, 2007 and 2009, using adjusted longitudinal weights

Weighting Methodology

The AHS provides cross-sectional weights with each sample that are applied to provide a snapshot of the nation's housing market at a given time. To understand how a trend among unweighted sample rental housing units corresponds to a weighted total for the nation, it is necessary to construct longitudinal weights. This article takes an approach that parallels the methods in HUD's CINCH reports. Due to sample adjustments, new construction, losses, tenure changes, and noninterviews, the weights for particular AHS sampled rental housing unit change between survey years. Following the approach taken in the CINCH reports, two separate sets of weights are developed: one for a forward-looking analysis to describe how the status of units in the 2007 rental housing stock changed in 2009, and one for a backward-looking analysis to describe the status of the 2009 rental housing stock in 2007.

For the forward-looking analysis, rental housing units are categorized as either existing in both 2007 and 2009 or existing in 2007 and lost in 2009. The basic weighting approach is to estimate the weighted count of losses in 2009 from the 2007 rental housing stock, and then adjust the pure weights for the units existing in both 2007 and 2009 so that they sum to the base 2007 count, net of losses:

$$ForwardLooking\ Weight = 2007\ Non-lost\ Unit\ Pure\ Weight * \frac{\sum 2007\ Units - \sum Losses\ in\ 2009}{\sum 2007\ Units\ in\ 2009}$$

Additional adjustments are made so that the revised 2007 weights sum to the corresponding published totals, distinguishing between tenure and occupancy status, and between mobile homes and all other rental housing units.

For the backward-looking analysis, rental housing units are categorized as existing in both 2007 and 2009, new construction in 2009 or other additions in 2009 (added from nonresidential use, made habitable from correction of deficiency, or added through merger or conversion). Similar to the forward-looking analysis, the pure weights are adjusted based on the changes to the rental housing stock. Estimates of new construction and other additions from the 2009 AHS are used to adjust the 2009 pure weights for rental housing units that existed in both 2007 and 2009 so that they sum to 2009 count net of new additions:

$$BackwardLooking\ Weight = 2009\ Non-lost\ Unit\ Pure\ Weight * \frac{\sum 2009\ Units - (\sum New\ Construction\ in\ 2009 + \sum Other\ Additions\ in\ 2009)}{\sum 2009\ Units\ in\ 2007}$$

If the weighting is done properly, the backward-looking and forward-looking weights should produce similar estimates of the number of rental housing units that existed in both 2007 and 2009. Exhibit C-4 shows that the estimate differs by slightly more than 0.5 percent.

Exhibit C-4

Rental Housing Units Existing in 2007 and 2009

Forward-looking weights	126,118,895
Backward-looking weights	125,303,451
Percent difference	– 0.65%

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Author

Rob Collinson is an analyst at the U.S. Department of Housing and Urban Development.

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Understanding and Mitigating Rental Risk

Todd Sinai
The Wharton School at the University of Pennsylvania and the National Bureau of Economic Research

Abstract

The decision of whether to rent or own a home should involve an evaluation of the relative risks and the relative costs of the two options. It is often assumed that renting is less risky than homeownership, but that is not always the case. Which option is riskier depends on the risk source and household characteristics.

This article provides a framework for understanding the sources of risk for renters. It outlines the most important determinants of risk: volatility in the total cost of obtaining housing, changes in housing costs after a move, and the correlation of rents with incomes. The article characterizes the magnitudes of those risks and discusses how the effects of risk vary across renter types and U.S. metropolitan areas. In addition, the article shows that renters spend less of their cash flow on housing than do otherwise equivalent owners and, thus, are better able to absorb housing cost risk.

Finally, potential policy approaches to rental housing that avoid increasing rent risk are discussed. A simple way to maintain renters' capacity to absorb rent risk is to avoid subsidies that result in an incentive to consume a larger rental housing quantity. Targeting rental subsidies to more mobile households or those living in low-volatility cities, where renting is less risky, should be considered. Long-term leases would provide an intermediate position between renting annually and owning but are currently rare.

Introduction

Much of the discussion about government subsidies that are targeted at homeownership or renting focuses on the subsidies' effects on the relative cost of owning versus renting. For example, how much do tax subsidies to homeownership lower the cost of owning? Is housing affordable, and do rental subsidies lower housing costs for low-income families? Are rents higher because renting is less economically efficient than owning because of misaligned incentives for renters and landlords?

Cost is just one of many differences between renting and owning, however. Another important distinction between the two tenure modes is risk. Both renters and homeowners face financial uncertainty in regard to their housing spending. How that uncertainty is manifested depends on a household's choice of tenure mode. Renters do not have large housing capital amounts at stake and thus are not affected by house price swings in their current market. Renters face uncertainty, however, about how much rent will cost during their lifetimes and are also subject to high-frequency rent volatility. In addition, renters do not automatically have an investment position in the housing market; therefore, they are more susceptible to volatility in the future housing cost, both locally and in other cities.

Any discussion of whether owning or renting is better for households should account for risk, not just cost. For example, when housing policy is evaluated, consideration should be given not only to how policy distorts households away from the optimal dollar amount of housing consumption, but also to how policy encourages or discourages taking financial risks that are best suited for a household.

Because the risks of renting and owning are not universally bad, but are merely inappropriate for some households and more appropriate for others, policymakers should consider risk in several ways when formulating policy toward renting. First, recognize that such policy might have unintended consequences for household risk. Renting exposes a household to housing market volatility, with the magnitude depending on the geographical market. Second, avoid incentivizing renters to spend larger portions of their incomes on rent because higher housing spending raises risk for renters as well as owners. Third, tailor policy to encourage renting (or not encourage homeownership) for just those households that would experience relatively less renting risk. For example, some housing markets are inherently less volatile and renters there face little uncertainty. Fourth, consider that financial products that could enable long-term renters to mitigate risk, such as long-term leases, exist but are not popular. The reason such products are unpopular is unknown, but a possibility is that subsidies to homeownership simply make owning a cheaper way to obtain many of the same benefits.

This article is motivated in part by the recognition that rental subsidies need not be targeted solely to low-income households. Homeownership subsidies are available throughout the income spectrum (Poterba and Sinai, 2010) and one could imagine policymakers considering a parallel program for renting. When policy goals move beyond considerations such as using rental subsidies to target income transfers to needy households, or to ensure a minimum rental housing quality standard, policymakers need to be aware of potential consequences of a broad based shift to renting.

Ironically, despite the common perception that homeownership is risky, encouraging renting would induce many households to actually take on more risk. The next section describes some sources of financial uncertainty for renters and homeowners. The section on getting from volatility to risk details how housing uncertainty morphs into risk and explains how the riskiness of renting can vary between geographic space and household types. Next, the article reviews evidence that renters are keen enough to avoid that risk that they are often willing to pay a premium above the rental cost to become homeowners. The section on capacity for volatility explains how some households can absorb risk with fewer consequences. Rent risk implications for policies aimed toward rental housing are considered in the final section.

The Volatility of Renting and Owning

To begin, it is important to recognize that the choice of how much housing to consume can be divorced from the question of how to pay for it. Many peoples' perceptions of the differences between renting and owning are colored by the fact that the residences that people tend to rent typically are quite different from the residences that people tend to buy. Rental residences are more likely to be in multifamily units, smaller, and less expensive within a given market. Thus the difference between renting and owning is often perceived as a decision about the quantity, the location, or the price point to consume. Despite the fact that owned and rented housing stocks are currently somewhat distinct, however, any given housing unit could be either purchased or rented—at some purchase price or rent amount. Indeed, if the United States were to shift away from its long history of subsidizing homeownership to something more akin to a level playing field or even a net subsidy to renting, the household types that currently tend to own could easily choose to rent instead, and housing units that currently tend to be owned could conceivably enter the rental stock. Of course, the implied annual cost of renting or owning the same unit can differ for a host of reasons, including differential tax treatment as an owner versus a landlord or renter, and the lower efficiency with which a landlord can monitor his or her rental property relative to an owner-occupier, especially if the dwelling is a single-family detached house.

Holding the housing unit and its annual cost the same across owning and renting, the financial difference between the two tenure modes comes down to the manner in which the service flow from that housing unit is paid for. Renters pay the flow cost of housing services as rent. By contrast, owners pay an upfront price to purchase a house. In addition, homeowners are responsible for property taxes and maintenance costs, whereas for a residential lease, the maintenance costs are typically included in the rent. Unlike renters, however, owners may receive money back when they sell their houses, taking either a capital gain or loss.

Another way to think about the difference in payments between renters and owners is that renters simply pay the spot price of housing services (the rent) whereas owners purchase an asset (the house) that pays a dividend exactly equal to the rent. In effect, owners use the yield from their housing asset to pay rent, with the two exactly netting out. By contrast, renters pay rent each year out of their pockets. Because renters do not have to make an initial investment in a house, however, they can instead use those funds to invest in other assets.

Both renters and owners start life with the same implicit future liability—they have to pay the market cost of obtaining housing every year for the rest of their lives. Beyond that, they make different portfolio decisions. Owners invest in houses whereas renters invest in some other set of assets. The usual equilibrium assumption, found in Hendershott and Slemrod (1983) and Poterba (1984), is that both portfolio positions should deliver the same risk adjusted return in expectation. Therefore, renters and owners in this example are equivalently wealthy and have comparable expected incomes. In other words, the only way a marginal household could expect to retain more income net of housing costs by being a renter rather than an owner is either by consuming a lower level of housing quantity or quality as a renter or by taking more risk. If owning and renting costs were not equal, after adjusting for differences in risk, households would change tenure mode until the relative costs of owning and renting became equal. For example, if everyone perceived

renting to be cheaper than owning, then homeowners would sell their houses and become renters until rents rose and house prices fell enough to make the difference in cost disappear. Of course, this equivalence in rental and ownership costs holds only for some marginal homebuyers, leaving perhaps many households strictly favoring one tenure mode or the other. Ownership and rental clienteles can be driven by differences in tax treatment, fixed home buying costs combined with the expected length of stay in the residence, underlying desire for homeownership, or other possibilities.

Differences in how renters and owners pay for their housing each lead to different sources of volatility. Renters, for example, do not know in advance how much their housing is going to cost them. It is up to the market. If rents in their cities rise faster than they expected, their total costs will be higher than anticipated. If rent growth unexpectedly stalls out, their total costs will be lower. In either case, the total lifetime cost of obtaining a home is uncertain.

Owners, on the other hand, know exactly how much their house will cost them: It's in the purchase and sale agreement. Of course, that assumes that owners never move out and thus never have to sell their houses. But for a homeowner who stays put for a long time, that sale price is relatively inconsequential. It occurs so far in the future that, unless average house price growth is substantial, the sale price is small in present value terms. It's almost as if the household never had to sell its house.

When a household move does arise, homeowners face the need to sell their house, which potentially has a volatile asset value. By contrast, renters presumably invested their wealth in a more diversified asset portfolio, and therefore, have less wealth volatility upon moving. Whether volatility in wealth at the time of a move is detrimental to the household is analyzed later in this article.

Despite the certainty of the purchase price, owners face uncertainty about the total homeownership cost. Property taxes and maintenance costs, for example, are paid by homeowners, are not guaranteed in advance, and are not insurable. These two cost components can be quite sizeable—property taxes average just above 1 percent of house value and maintenance costs are widely believed to be about 2.5 percent of house value—and, given today's low interest rates, are collectively about one-half of the annual property rental value. The volatility of these particular homeownership costs are not known; it is difficult to collect data on changes in local property taxes and, because maintenance can be deferred, it is hard to distinguish the true arrival rate of underlying problems that should be fixed or updated from when the homeowner fixed them. In this paper, the comparison between the risks of renting and owning implicitly nets out any volatility in property tax or maintenance costs.

Rent volatility is presumably caused by localized shocks to housing demand or supply. Housing demand shocks are usually attributed to changes in the local economy or migration. New housing construction typically follows demand shocks, but is limited in some areas due to regulation or topographical constraints. Saiz (2010) and Sinai (2009) presented some rough evidence that rent volatility is most pronounced in areas with more volatile underlying demand and relatively inelastic supply. Using a cross section of metropolitan statistical areas (MSAs), Sinai (2009) showed that MSAs with less elastic supply and more volatile employment experience more variable apartment rents. These volatility sources would affect annual rents and current house prices, but not the annual costs of already purchased homes. Those latter costs are locked in at the time of the home purchase, with the exception of the sale price of the house, which responds to the demand and supply conditions in the market.

Another potential source of volatility for owners is financing costs. Empirically, it is rare for households to buy their houses with cash. In the 2007 Survey of Consumer Finances, 33 percent of homeowners had no mortgage debt. Homeowners who had mortgage debt averaged a 53-percent loan-to-value ratio. Fixed-rate mortgages are common in the United States, however, and allow any household to avoid interest rate volatility if it prefers to do so.

The risk in housing costs for renters and owners can come in two forms. First, the total cost of obtaining housing services during some period, such as the duration of stay in a residence, or during one's lifetime, is volatile. This total cost volatility is a pretty fundamental source of risk; simply put, one does not know in advance how much a given amount of housing will cost. Renters and owners can experience very different total cost volatilities. Renters who are going to remain in their houses for a long time face considerable risk because their total rent depends on market forces. By contrast, owners who are going to remain in their houses a long time face little risk because the purchase price of a house is known and the sale price is so far in the future as to be inconsequential (or the household will have died by then).

Economists tend to focus on total housing cost volatility because they assume that households can borrow easily (and inexpensively). That is, a year of high rent followed by a year of low rent doesn't matter to a household if it can borrow to cover rent in expensive years and pay the loan back when rent is cheap, or has sufficient liquid assets to tap to smooth the volatility. Such a household worries only about total housing costs. If, by contrast, households face liquidity constraints, the year-to-year volatility in rent generates additional risk for renter households. Owner households are less exposed to this additional risk because their nondiscretionary cash outflow for the house has less volatility. Although liquidity constrained owners must find a way to borrow money to purchase a home in the first place, after they have made the purchase the year-to-year volatility in housing costs is significantly reduced.

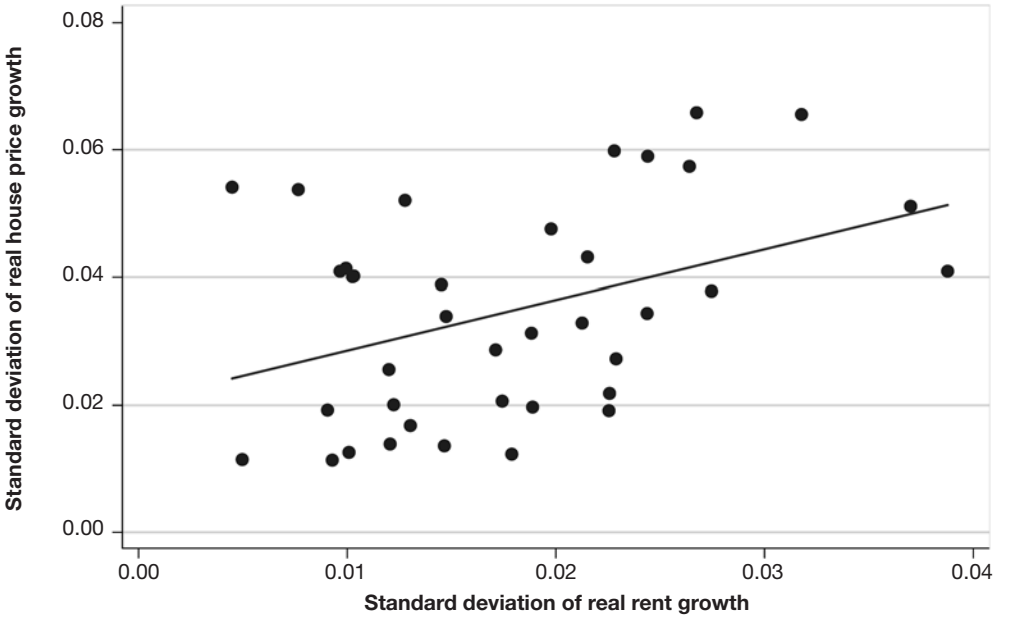
Households are not equally exposed to housing cost risk. Volatility can vary considerably across housing markets; therefore, renters in a volatile market have less certainty about their total housing costs than do renters in a less volatile market. Likewise, owners in a volatile market are less sure about their sale prices than owners elsewhere. The differences in volatility can be seen in exhibit 1. On the x-axis, the standard deviation in annualized growth in real rents during a 5-year period is plotted. Each dot corresponds to an MSA. Rents come from a survey by REIS, Inc., of high-quality apartment buildings in 38 major markets during the 1980 through 2009 period. The standard deviation in rent growth ranges from 0.005 to 0.040. At the bottom end of the range, an apartment that rented for $12,000 per year that experienced a one standard deviation excess real growth in rent would rent for $12,550 5 years later.[1] At the top end of the rent volatility range, if that same apartment experienced a one standard deviation higher rent growth rate, it would rent for $14,883 after 5 years. In the former case, renters are not exposed to much uncertainty. In the latter case, rent uncertainty is considerably higher. Thus, exhibit 1 shows that the amount of rent uncertainty varies by housing market. Sinai (2009) reported rent volatility for each MSA individually.

[1] The average growth rate in rents is approximately 0.4 percent annualized during a 5-year period: $(1 + 0.005 + 0.004)^5 \times 12{,}000 = 12{,}550$.

Exhibit 1

Relationship of House Price Growth Volatility to Rent Growth Volatility, 5-Year Growth, 1980–2009

Correlation coefficient = .394 (38 observations)



A similar range can be seen in the standard deviation of real house price growth (again, annualized over 5 years), which is plotted on the y-axis. It ranges from about 1 to 7 percent and is constructed using the FHFA repeat sales index, adjusted for inflation. An MSA at the bottom of the house price volatility range that saw real house price growth of one standard deviation above the average would experience real price growth from $120,000 to $126,120 after 5 years. At the top of the range, a one standard deviation higher house price growth would cause a $120,000 house to appreciate to $168,306. Although homeowners might be sanguine about house price increases, a parallel decline in house prices would yield a $114,175 real sale price in the low volatility MSA after 5 years and $85,558 in the high-volatility MSA. Once again, some housing markets are relatively stable and others are much more uncertain. (See Sinai, 2009, for a breakdown by MSA.)

Although renters and owners both face volatility in any given housing market, little evidence exists to show whether either group is exposed to more or less inherent housing market uncertainty than the other. In any given city, house prices and rents generally track each other. This empirical fact is consistent with theory which, with varying degrees of complication, notes that asset market equilibrium requires that house prices be equal to the present value of expected future rents plus an adjustment for differences in risk (for examples, see Meese and Wallace, 1994; Ortalo-Magné and Prat, 2010; and Sinai and Souleles, 2005). Sinai (2009) showed that, during the 1990 to 2002 period, the correlation in the standard deviations of detrended real rents and detrended real house prices was 0.87. In exhibit 1, the correlation in the real 5-year (annualized) standard deviations

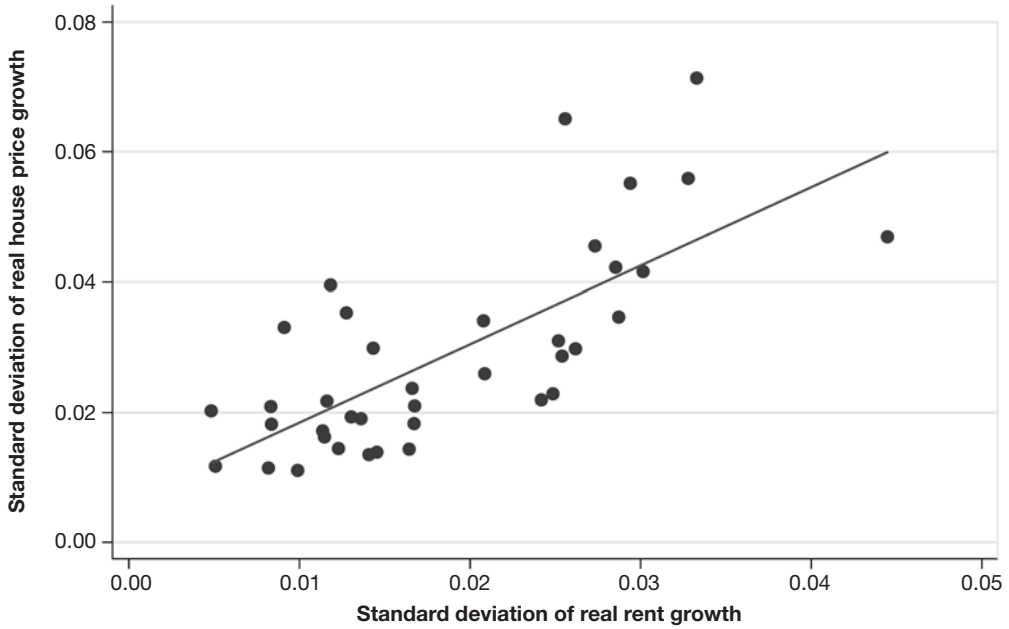
for these 38 MSAs is 0.39. The reason for the lower correlation is twofold. First, exhibit 1 encompasses the housing boom-bust period of the late 2000s, which was a low-correlation period, whereas the sample period in Sinai (2009) ended in 2002. Second, the growth rates used in exhibit 1, being a short difference, tend to have lower correlations than do deviations from a trend, used in Sinai (2009), which are a long difference. Exhibit 2 restricts the time period to end in 2002, which leaves out the recent boom-bust period for housing. The correlation in rent and price growth standard deviation is 0.73 during the 1980 to 2002 period. The MSA points in exhibit 2 also lie closer to the bivariate regression line than they do in exhibit 1, suggesting that the 2002-to-2009 period added noise to the historical relationship between rent volatility and house price volatility. The usual high correlation in rent and house price volatility shown in exhibits 1 and 2 suggest that differences in risk between owners and renters within a given housing market are largely due to how housing services are funded, not any difference in the inherent volatility of the two housing sectors within a given MSA.

It is worth noting that although the fact that house prices and rents are correlated within a market is consistent with the asset pricing notion that a shock to either the rental or owner-occupied market should be reflected in the other sector, it is not proof. Instead, a shock that is common to both the rental and owner-occupied sectors, such as a demand shock, could be generating correlated price responses. In fact, Blackley and Follain (1996) found little evidence that a shock to the demand for owner-occupied housing because of changes in the tax code is reflected in the rental sector.

Exhibit 2

Relationship of House Price Growth Volatility to Rent Growth Volatility, 5-Year Growth, 1980–2002

Correlation coefficient = .729 (38 observations)



Many households do not have the luxury of staying in one house virtually forever, even leaving aside the nasty complication of death. They might need to move for a job, for a different school system, or for a larger house or apartment. Such forced moving creates another financial uncertainty source and another distinction between renters and owners. Renters are uncertain whether future rental costs will be higher or lower than expected. Owners are uncertain about the future sales price of their current house. In addition, like renters, they are uncertain about how much they will have to pay for their next house. Once again, the degree of uncertainty depends on the current household location and the location to which it might move. In the previous example, if a renter in the lowest volatility MSA moved to the highest volatility MSA after 5 years, and both MSAs experienced a one standard deviation positive shock, the renter would be moving from a $12,550 per year rental unit to one that cost $14,883 per year. A similarly situated owner would be moving from a market where his house cost $120,000 to a location where an equivalent house would cost $168,306. And that is assuming that initial rents or purchase prices were the same in both housing markets.[2]

Getting From Volatility to Risk

It is important to recognize that volatility is not necessarily the same as risk. If housing service cost volatility leads to housing and nonhousing consumption volatility, one would expect households to dislike it. But volatility in housing costs can reduce volatility in housing and nonhousing consumption if changes in housing costs undo volatility in other dimensions, for example, income or the cost of consumption. Such helpful volatility is labeled a hedge, and the volatility that households dislike, a risk.

In a simple sense, just owning a house provides a hedge for housing market risk. Recall that the difference between owners and renters is just the realization of their portfolio returns, because owners own houses and renters invest in other assets. The returns on houses are highly correlated with rental costs; therefore, houses generate a higher return when rental costs are more expensive. By contrast, renters' assets have a lower correlation with rental costs because it is extremely difficult to obtain a set of financial assets that vary along with housing costs as much as a house does. In a housing market where rents are volatile, renters would face risk in their total or annual housing costs because their investment returns may be low when housing costs end up being high, or vice versa. A homeowner, by contrast, owns an asset that implicitly pays an annual dividend exactly equal to the rent needed in each year. For homeowners, that implicit rental income offsets the implicit rental expense and leaves them with less risk on net. Because the housing unit is the same whether or not the rental cost increases, a household can actually reduce the volatility of its overall consumption—housing and nonhousing—by investing in an asset with a return that offsets the preexisting rent liability.[3]

[2] Although this article focuses on the differences in financial risk between renting and owning, nonfinancial differences are also important. For example, homeowners have control of their houses—when to move, whether to renovate, and so forth—in a way that renters do not.

[3] It is not necessarily the case that a household should want to undo all of their housing cost risk by buying a house. A partial hedge could be preferable. Renting plus holding an asset that pays a dividend that is correlated with rental costs could obtain that position. Likewise, owning and taking the opposite position on the hedge would generate the same position.

Owning a house also can provide a hedge for the risk households face about housing costs in a future location. If a renter unexpectedly moves to a new city, housing costs may be more or less expensive than she anticipated. An owner faces a double whammy: Not only does she not know what the price of a house in her new city will be, she does not know at the time of purchase how much she will be able to sell her prior house for when it comes time to move. That sell/buy transaction—selling the current house and purchasing a new one—creates risk if the sale price and purchase price are not equal. If so, the sale/purchase pair will either require an infusion of capital (if the new house is more expensive than the old one) or will yield a cash windfall (if the new house is less expensive). Because, according to Sinai and Souleles (2009), 45 percent of families move in a 5-year period, and 10 percent of families move out of their MSA, the potential risk to either a renter or owner from a move to different housing market is quite high.

In this scenario, the renter faces less risk than the owner if housing costs in the origin and destination cities do not move together much. The renter is exposed just to the risk of the total housing costs in the destination city. In addition, the renter, who invested her equity in nonhousing assets, has a more diversified portfolio overall than the owner and faces less volatility in her wealth at the time of the move. But if housing costs in the origin and destination cities covary positively, owning a house in the origin city hedges housing cost risks in the destination city, a benefit the renter does not enjoy. In essence, when house prices in two cities covary positively, a homeowner is wealthier—she can sell her existing house for more—when housing becomes more expensive in the destination city. Likewise, she is poorer when housing is less expensive. In those cases, the volatility of her wealth net of expected housing costs is reduced by owning the house. By contrast, a renter, who is unable to avoid having low covariance between her assets and future housing costs, is more likely to experience high portfolio returns when housing becomes less expensive in the destination city and low returns when housing becomes more costly. In first case, the renter can afford more housing than before and in the second case, the renter can't afford as much. That volatility in consumption subsequent to a move is what homeowners moving between two markets with high house price covariance can avoid.

It turns out that for most Americans, the covariance in housing costs between their current housing market and the cities they are likely to move to is remarkably high (Sinai and Souleles, 2009). The median expected correlation in real house price growth is 0.6, and the 75th percentile expected correlation is about 0.9. A similar, but less interpretable, pattern is evident in expected covariances across MSAs in house price growth. A high covariance between wealth and housing costs can be obtained best by investing in a house because the average house price correlation with stock or bond prices is much lower (for example, see Gyourko and Keim, 1992). In the context of the previous example, many homeowners have home sales prices that tend to be high at the same time that the purchase price of their next houses tend to be high. That is, the increase in house value in the high-volatility market to $168,000 is not such a windfall if the house in the next market also appreciated to about $160,000. And a decline in value to $88,000, absent leverage, is not so painful if the price of the new house also fell to $90,000 or so.

The risk of forgoing the investment position embedded in homeownership by renting instead varies critically by geography and household type. In general, houses in markets with little volatility cannot be used as a hedge against volatile house prices elsewhere, whereas houses in cities with

more volatility have the potential to be better hedges. However, the expected covariance—and thus the potential hedge—can vary widely across households within a given city because households are likely to move to different places. Some households in some cities have a zero or negative expected covariance between their house price growth and house price growth in the cities they expect to move to, while households in other cities or other industries may tend to move to more correlated housing markets. In addition, owning a house might provide a good hedge for durable consumption items whose costs rise when real estate values go up. Such goods would have land as a significant input factor. Assisted living care, for example, might be more affordable to homeowners than to renters because if house values and assisted living costs tend to rise at the same time, homeowners could usually sell their houses to pay for assisted living care.

Another way that owning a home might reduce the effect of housing market uncertainty is that it provides an option to move. Suppose an owner's house price rose more than house prices elsewhere. He would be able to sell his house and move to other places that, perhaps, were previously unaffordable. If, however, his house price fell by more than house prices elsewhere, the owner would not have to move. Instead, he could stay put and consume just as much housing services as he always has. Only homeowners have the option to move and trade up their housing if market conditions allow without being forced to trade down their housing when market conditions are poor. Such homeowners would prefer house price uncertainty, as long as the uncertainty is relatively uncorrelated with house prices elsewhere.

One important factor complicates this analysis. So far, this article implicitly assumes that households' incomes are independent of housing cost changes, so incomes do not necessarily go up when rents rise. If incomes and rents covaried, renting would be more favorable (Davidoff, 2006). Rent uncertainty would be offset by income uncertainty, and together would reduce housing and nonhousing consumption volatility. If households had greater incomes when rents were higher, they not only could afford the higher rent, they would still have money left over for nonhousing consumption. In a sense, rent volatility could hedge income uncertainty, leading to less volatility in consumption overall. Davidoff (2006) considered the case where households are not liquidity constrained, and examines the correlation between total housing cost and lifetime income. In addition, if liquidity constraints are an issue, a positive covariance in annual incomes and rents would reduce renting risks relative to owning. Both cases can be exemplified by the idea of company towns. If housing demand and employees' wages are driven by the productivity of the local factory, then rents in that location would be high when incomes were high, and being a renter would yield less volatility in both housing and nonhousing consumption. By contrast, an owner would have more nonhousing consumption volatility (because housing costs would be constant and income would be variable) and her house value would be lowest precisely when she would want to move away: when the factory was not doing well and she was laid off.

Income uncertainty also complicates the analysis of the risk of moving to a new city. A positive covariance between income subsequent to a move and house prices in the destination reduces moving risk. For example, if a household that moves to a city where home prices have gone up more than expected also earns more than expected, that household's wealth is again higher (because of higher human capital wealth) precisely when housing is more expensive. The household need not own a home to obtain the benefit of income as a hedge for future housing costs. Indeed, depending on

how much income changes offset changes in housing costs after a move, owning a home could overcompensate and create too much volatility. That is, if both home prices and incomes rise when a household moves to a location where housing costs rose more than expected, the household's wealth might have gone up by more than necessary to cover the additional housing costs. The degree to which incomes and home prices might covary depends on things like the worker's industry and that industry's share of the local employment market. For example, if an industry is a large local employer and has a profitable year, it may pay employees more, and their good fortune could then be capitalized into home prices, generating a high correlation between income and home prices.

Direct evidence is lacking on the degree of covariance between incomes and house prices subsequent to a move. Paciorek and Sinai (2010) provided indirect evidence that income does not fully hedge housing cost uncertainty and that homeownership does provide an additional reduction in housing consumption volatility. They find that after netting out any income relationship, owners of homes that provide better hedges against future housing cost uncertainty have lower variability of housing consumption after a move. This result indicates that homeowners, on average, are not overcompensating for volatility in future housing costs. If they did overcompensate, hedged homeowners should experience increased housing volatility, not less.

Paying for Reduced Risk

Households seem to recognize the value of the reduced risk that accompanies homeownership. Several recent studies have found that in circumstances where homeownership provides a better hedge, households have higher housing demand. Sinai and Souleles (2005) showed that the likelihood of homeownership is higher when a household lives in a more volatile housing market and is less likely to move (for exogenous demographic reasons). In low-volatility housing markets neither renting nor owning generates much uncertainty. By contrast, in high-volatility housing markets, short horizon owners experience sizeable sale price risk whereas long horizon renters experience sizeable rent risk. Han (2010) showed that the home sale price risk effect reduces the quantity of housing purchased by homeowners who are more likely to move out of the local housing market. Sinai and Souleles (2009) found that the reduction in demand for homeownership by short horizon households in high-volatility housing markets is mitigated for households that expect to move between highly covarying housing markets. For homeowners in short horizon households, the uncertainty about the sale price is a benefit because it reduces the uncertainty of the purchase price of their subsequent home. The benefit can be quite sizeable. Paciorek and Sinai (2009) estimated that, for households that move, the value of the lower variability in subsequent housing consumption is as much as 20 percent of their home price.

Importantly, households appear willing to pay a higher house price to avoid the higher volatility that accompanies renting. Sinai and Souleles (2005) provided empirical evidence that home prices capitalize a premium that increases with the amount of rent volatility avoided by owning. They find that a one standard deviation increase in the volatility of detrended real rent leads to a 0.18 to 0.62 increase in the price to rent ratio, or a 1.1- to 3.9-percent increase in prices (holding rents constant). Those home prices capitalize only the willingness to pay of the marginal homebuyer.

Within a housing market, then, inframarginal households value avoiding the risk of renting even more than the risk premium embedded into home prices. (And some households still rent because they are unwilling to pay the premium required to own.)

Capacity for Volatility

If renting delivers more risk than owning and households realize that fact (and the evidence that they have a higher demand for homeownership when renting is riskier suggests they do), why does popular opinion seem to perceive that homeownership is riskier than renting? One possibility is that renters have a greater capacity to absorb uncertainty in housing costs or incomes. The primary channel by which that happens is that renters spend a smaller fraction of their incomes or net worth on housing than owners, holding constant age and marital status. This fact can be seen in exhibit 3, which regresses a measure of annual log housing costs on log income and an indicator variable for a renting household, plus some controls. The first three columns use household-level data from the 1980, 1990, and 2000 U.S. Census. The last two columns use household data from the Survey of Consumer Finances in 2004. Annual housing costs for renters are defined as 12 months of rent.

Estimating annual housing costs for owners is tricky, because a house's price is observed, but its rental value is not. In this article, rental value is imputed for owned houses in a couple of ways. First, a hedonic model of rents is constructed using the data from the Census. The hedonic model is then applied to predict rental values for each of the homeowners. Second, a user cost model is applied, following the method of Poterba and Sinai (2008). The user cost (UC) is the sum of the annual after tax expenses (including the cost of capital) less the expected capital gain, which is the money the owner gets back by selling the home for more than what he paid, per dollar of house.

Exhibit 3

Differences in Annual Spending on Housing by Renters and Owners

Data Source	IPUMS (Census)			Survey of Consumer Finances	
Rent Imputation	Predicted Rent	User Cost	User Cost Excluding Capital Gains	User Cost	User Cost Excluding Capital Gains
Renter indicator	– 0.1681	0.1709	– 0.6308	– 0.214	– 0.525
	(0.0004)	(0.0007)	(0.0007)	(0.014)	(0.014)
Log household income	0.1171	0.2957	0.2936	0.504	0.521
	(0.0002)	(0.0004)	(0.0004)	(0.004)	(0.003)
Adjusted R2	0.3998	0.2777	0.4674	0.6426	0.6937
MSA dummies?	Yes	Yes	Yes	No	No
Age dummies?	Yes	Yes	Yes	Yes	Yes
Married dummy?	Yes	Yes	Yes	Yes	Yes
Year dummies?	Yes	Yes	Yes	NA	NA
Sample period	1980	1980	1980	2004	2004
	1990	1990	1990		
	2000	2000	2000		
Number of observations	4,070,627	4,070,627	4,070,627	19,099	19,099

IPUMS = Integrated Public Use Microdata Series. MSA = metropolitan statistical area. NA = not available.

The two approaches are conceptually related. For a landlord, rent (R) plus the expected capital gain needs to yield the market return on his investment. For an owner, the annual cost plus the expected capital gain needs to deliver the same return. Thus, R should equal UC x P, when P is the price of the house. However, an important distinction remains between rent and user cost: Rent is a cash payment to landlords. User cost has a higher cash cost than rent but user cost is reduced—on paper—by any house price appreciation.

The first column of exhibit 3 uses the hedonic to impute rents to homeowners. It shows renters, on average, spend about 17 percent less per year on rent (or equivalent) than owners, holding a number of household characteristics, including income, constant. In the second column, a scaling factor, estimated from the user cost model, is applied to self-reported home values to obtain the rental equivalent for an owned house. Under these conditions renters are estimated to spend 17 percent more per year on housing than owners. The explanation for the discrepancy between columns 1 and 2 is evident in column 3, which modifies the user cost scaling factor to exclude the capital gains component and thus deliver a number closer to a cashflow measure of housing spending (without the capital gains offset since it is just a paper gain). In that case, renters are estimated to spend 63 percent less on housing than similarly situated owners. Basically, owners are spending more cash on their residences than renters, but they (on average) more than get that difference back on paper in the form of capital gains.

The last two columns repeat the exercise using the Survey of Consumer Finances (SCF) and the user cost imputation. The same gap between the standard user cost and the user cost that excludes the benefit of capital gains can be seen in this data set. Renters spend an estimated 53 percent less on housing (on a more or less cashflow basis) than owners (the last column). When owners are credited with the benefit of the expected capital appreciation, renters are estimated to spend 21 percent less than them on their housing service flow. In results not reported in this article, the same pattern can be found when net worth (excluding housing) is controlled for in the SCF regressions.

Renters spend less on housing, *ceteris paribus*, for many possible reasons. One reason might be that renters are savvy enough to recognize that they are accepting more housing cost volatility and intentionally buffer themselves against that volatility by consuming less housing relative to income or net worth. Another is that renters choose to rent in part because they are the types of people, even holding observable characteristics constant, who do not like to consume much housing and the rental stock is typically cheaper than the owned stock. A third possible reason is renters are saving for a down payment to buy a house. A fourth possible reason is that the tax price elasticity of demand for housing might be greater than one, and thus the tax subsidy to homeowners leads to higher spending even net of tax. Glaeser and Gyourko (2006) summarized that elasticities found by the literature range from 0 to 2.

In any case, the lower spend rate on housing suggests that renters can more easily absorb higher than expected rent growth. In addition, they can better handle declines in their incomes because they have not committed to spending as high of a fraction of their incomes. Sinai and Souleles (2005) provided some evidence that households realize that spending less on housing provides a buffer against housing market volatility: households that live in housing markets that are costly relative to their incomes are more apt to take housing market volatility into account when making their housing decisions than households with housing costs that are a smaller portion of their spending.

The tendency of owners to spend a larger fraction of their incomes on housing than renters could be one of the main reasons that the conventional wisdom views homeownership as riskier. If renters spent as much of their incomes on housing as owners implicitly do, they would be more likely to be evicted for nonpayment of rent in a downturn than they currently are. Still, even if renters and owners exhibited comparable housing spending, it is less expensive to be forced to move out of a rental apartment than to move out of a house, merely because the transaction cost of selling a home is higher than the transaction cost of moving out of an apartment.

A possible virtue of renting, however, comes in how the time path of rental payments in a market where rents are expected to increase differs from the cash outflow an owner must pay. A renter pays a low initial rent because a landlord expects some capital gain because of the anticipated growth in rental income and thus does not need as high of a cash yield in the form of rent. But because rents typically go up over time, the expected rent trajectory for renters starts low and rises. Homeownership cash costs are essentially level. In addition, they are higher than rents would be because the owner expects to get money back on paper on average via capital gains, but does not actually monetize that gain until he sells. For liquidity-constrained households with rising expected incomes, renting matches cashflows better than owning.

Another important reason the conventional wisdom might view renting as less risky than owning is that the use of leverage by homeowners magnifies the consequences of a bad shock. Namely, owners can be under water on their mortgages, whereas renters, who have no mortgages, cannot. Negative equity can lead to many problems ranging from impaired mobility (Chan, 2001; Ferreira, Gyourko, and Tracy, 2010) to foreclosures and risks to the financial system. These risks, however, result from using high levels of debt finance to purchase housing, not from merely owning housing in isolation. If households were able to pay cash for their houses, none of the problems listed above would exist. Indeed, many of the major complications created by the housing bust of 2007 are because of defaults and foreclosures, which are a feature of mortgage finance, not homeownership *per se*.

It would be disingenuous to dismiss the risk of mortgage finance, however, because most homeowners in the United States use mortgages to purchase their houses. According to Sinai and Souleles (2008), 90 percent of homeowners under the age of 45, but less than 20 percent of homeowners above the age of 75, have mortgages. Low-income and younger homeowners simply do not have the assets to obtain their preferred home without a mortgage. Using data from the 2004 Survey of Consumer Finances, Poterba and Sinai (2011) showed that less than 30 percent of aggregate mortgage debt could be replaced with equity from financial assets on households' balance sheets. Young, low-income households in particular could reduce their mortgage debt by no more than 15 percent. Like it or not, using leverage appears to be bundled with homeownership.

A full treatment of the risks of home mortgages is beyond the scope of this article. In addition, it is already well understood that financing a volatile asset with high leverage—whether in commercial real estate, houses, or even airlines—is risky. Instead, to enjoy the risk management aspects of homeownership, homeowners need to mitigate the risks of leverage. The steps are simple in theory, although more difficult to execute in practice. Use conservative amounts of debt: households that use less leverage are less likely to find themselves owing more than the home is worth. Do not purchase more home than you can afford: households that purchase conservative amounts of housing are less likely to find themselves unable to pay for it. And beware of the risks of mandatory debt

refinancing, whether explicitly (through a new mortgage) or implicitly (through an adjustment in an option adjustable rate mortgage). With typical fully amortizing mortgages, refinancing is an issue only when a household moves. At that point, a household runs the risk that mortgage rates have risen—and it then becomes an expensive proposition to give up a low-rate mortgage to switch houses—or that financing criteria have become more conservative and they cannot borrow enough to afford a new house. This difficult dilemma can be eased either by households saving to accumulate enough assets to reduce the total leverage on their balance sheets or by the creation of portable mortgages that could be transferred (with reasonable restrictions) to a new house.

Implications for Rental Policy

Currently, the housing playing field is tilted toward homeownership, especially at the high end of the income distribution, due to its favorable tax treatment and the government subsidy for mortgage finance (first through the implicit guarantee of GSE debt and subsequently through the Fed's active role as a purchaser of mortgage backed securities). For less well-off households, the playing field is more neutral. The subsidy to homeownership is smaller for low-income households that, despite financing their houses largely with debt, typically do not receive much benefit from the mortgage interest deduction because they do not have enough potential deductions to merit itemizing on their tax returns (Poterba and Sinai, 2011). Renting is subsidized largely through place-based public housing and voucher programs. Because of the large amount of crowd out of private housing consumption by public subsidies, however, low-income housing subsidies can be more like targeted income transfers than subsidies to renting (Sinai and Waldfogel, 2005).

The playing field between renting and owning can be leveled in two ways. One is to reduce the subsidy to homeownership. The other is to increase the subsidy to renters to compensate for the existing subsidy to homeownership. These two approaches are neither equivalent in terms of risk nor incentives. It is important to recognize that housing or rental policies typically influence not only whether households own or rent, or how much housing they consume, but also how much and what kinds of risk they take on. Assessments of housing policies should account for whether households are induced to take more appropriate risks, not just whether household consumption is affected.

To assess differences in risk, it is helpful to recall that homeownership can be thought of as housing consumption plus an investment in housing in the local market. Both components have independent effects on risk. The housing consumption part has the same risks for both renters and owners—the cost of housing services can fluctuate. Because everyone needs a home, both renters and owners need to obtain housing services and face this source of risk. The difference between them, in fact, comes in how they handle it.

Owners deal with the uncertainty about future housing costs by making investments in their local housing markets: They buy houses. (It is an extremely local market, because they buy their own houses.) Renters just accept the volatility of housing cost fluctuations and invest in a more diversified portfolio. This decomposition of owning into renting plus an offsetting investment makes some sources of risk apparent. First, risk rises with spending on housing services (holding income constant). Thus, the most obvious way for any household—renter or owner—to control risk is

to avoid spending too much on housing relative to its income or wealth. For renters, spending less on rent relative to income reduces the effect of rent fluctuations on nonhousing consumption or income fluctuations on the ability to continue to pay rent. Therefore, policymakers should be careful to make sure that any incentive for renting is not also an incentive to spend more on rent. Likewise, current tax policy subsidizes the consumption of additional housing for homeowners. Reducing this subsidy would mitigate the risk that follows from homeowners being incentivized to devote more of their resources to housing.

The second way a renter can manage the risk of rent fluctuations is by taking on an offsetting investment in local housing. Although it seems ironic to encourage households to make a volatile investment, the investment simply negates the household's preexisting risk. For example, one can think of owning a home as owning a financial asset that for each period in perpetuity pays the current rental cost of a home combined with renting the house. When rents are higher, the financial asset pays just enough more to cover the increment. When rents are expected to be higher in the future, the financial asset is worth more, just offsetting the extra cost.

Currently, the only viable way to invest in local housing markets is to own the home you live in. That is a polar case investment of 100 percent of the approximate expected rental cost (in present value, adjusted for risk) if a household were to live in the home in perpetuity. Renting is another polar case, but of zero investment. For many households, owning can be too much investment in housing because they do not expect to stay in the home for a long enough time. In that case, the residual home value at the time of its sale is uncertain, potentially leading to risk.

An investment in housing, however, need not be limited to 100 percent (owning) or zero (renting). For example, long-term leases eliminate the primary risk renters face, not being able to lock in their total cost of obtaining housing, for a set time period. That is because a long-term lease is like a financial asset that for each period during the lease term pays the current home rental cost. The economic difference between a lease and ownership is merely the fixed rent term length (a lease is finite but ownership is perpetual). Indeed, an infinitely long, transferable lease is just like owning. Other differences between leasing and owning are merely institutional. For example, lease payments typically are paid each year whereas a purchase price is paid upfront. The timing and amount of lease payments are set by contract; however, the only reason they are not frontloaded like a purchase is that the landlord and tenant choose not to.[4] Another typical institutional difference between renting and owning is that residential tenants typically do not have discretion about making renovations to a property like an owner does. But they would, if the lease contract were not written to disallow it.

Given their potential benefits, one wonders why it is that long-term residential leases are not already commonplace in the United States? Although long-term fixed rent leases (or with built in, known escalations) are prevalent in commercial real estate in the United States, they are exceedingly rare in domestic residential leases. Genesove (2003) found that fewer than 2 percent of residential leases in the United States are for 1 year or more, although many renter households

[4] Presumably, a tenant would be worried about counterparty risk—the landlord would collect an up-front rent payment and then fail to provide the contracted rental unit.

live in the same rental unit for longer than 1 year. One possible explanation is that it simply is cheaper to obtain long-term lease benefits by owning. As discussed previously, homeownership is favored by the tax code. Perhaps, absent subsidized ownership, a long-term rental sector would develop. Unfortunately, existing empirical research does not address that issue. In most studies, the own-rent margin is not estimated to be very sensitive to the tax subsidy amount for homeownership. This empirical research cannot truly address any systemic shifts in the housing market that might arise from a large change in the overall tax treatment of homeownership, however, because typically they are estimated from small changes in tax rates.

Another possible explanation for the lack of long-term renting in the United States is that tenants would have to pay a premium for such a lease. One expensive likely feature of a long-term residential lease would be that a tenant could break the lease at will. When would a tenant break a lease? Besides exogenous moves, if market rents dropped below what was agreed on in a long-term lease, a strategic tenant would move out to a cheaper apartment and the landlord would have to re-lease the unit at a lower rent. If rents rose above what was agreed upon in the lease contract, the tenant would not move out. This one-sided benefit in favor of the tenant would be most valuable in housing markets where rents were the most volatile. Commercial leases avoid this asymmetry by enforcing that a tenant pays either the rent for the entire lease term or a penalty that makes the landlord whole if the tenant departs. It seems less likely that individual residential tenants could be forced to do that in a contract and, even if they could, that a landlord could efficiently collect. Instead, a landlord would have to be compensated for the tenant's option through higher rent for long-term leases. That rent premium would have to be largest in housing markets where housing costs fluctuated the most and for longer leases, where the odds are higher that market rents could drop below the rates in the long-term lease. Paradoxically, the very households that would value long-term leases—those that intend not to move—face the highest rental premium and the lowest ownership cost. As renters, they would have to pay a high rent premium because the option to break the lease is most likely to be "in the money." Because households that are unlikely to move amortize the high transaction costs of ownership over a longer horizon, they reduce the per period ownership cost.

A second risk source, detailed previously, is uncertainty about housing costs in future residences, whether those new houses are in the same city as the current ones, or in new housing markets. Homeowners' investment positions hedge them against changes in housing costs in future houses in the same city because the value of their investments go up when local housing costs rise. To the extent that changes in housing costs are correlated across cities the household might move to, the same change in sale value hedges an owner against changes in housing costs in other cities. Renters, because they lack investment positions in housing, are unhedged. Long-term leases could remedy this omission if the leases could be transferred to new tenants. The reason is that long-term leases become more valuable when current rents rise, just as houses become more valuable when rents go up. A household that moves out of a rental unit could sell the right to take over a favorable lease and use the proceeds to defray higher rent in the next rental unit. One possible reason that long-term leases have not gained traction in the United States is that the domestic population is fairly mobile and assumable leases are atypical.

Other potential options for renters to avoid the risk from moving involve taking positions between the extremes of only renting or only owning. These alternatives run into a host of concerns about implementation, however. For example, if a renter knew with certainty where she would move next, just not when, she could become a landlord in that other city. She could buy a housing unit there and rent it to a tenant, meanwhile renting a place herself in her current city. This strategy separates the investment in housing, which provides the hedge against uncertain future housing costs, from the consumption in housing. This approach poses a number of practical problems. For example, when it is time for her to move, the combination tenant and landlord would have to break the lease both with her landlord and with her tenant. She would have to manage her rental property. And, because being a landlord is homeownership, this approach does not achieve a policy goal of encouraging households to be renters rather than owners.

An alternative to being a landlord would be to invest in a housing index that tracked the destination city. This alternative would provide an investment position in housing without the hassle of managing a property. A renter could even invest in a basket of city housing indexes, weighted by her likelihood of moving to each of the cities. Such indexes, such as the S&P/Case-Shiller® Home Price Indices, are tradable and would simply need to be packaged into products that consumers could easily understand (for examples, see Case, Shiller, and Weiss, 1993; DeJong, Driessen, and Van Hemert, 2007; Shiller, 2008; and Voicu, 2007). Adopting this strategy faces several difficulties. First, where does a household find the money to maintain a long position in possible future cities? And, if leverage is necessary to buy the position in the housing index, a decline in the index can leave the renter under water just like a decline in home prices can do to an owner. Instead, a renter might prefer an option-based product to reduce their risk. For example, a renter who wished to limit his exposure to home price increases could purchase an option that pays the excess of home prices in a destination city above some threshold if home prices rise enough. Such financial products would be expensive, however, because the option seller would absorb the risk from the renter, and the derivatives markets necessary to create such products have failed to develop.

Because the market has not delivered mechanisms for renters to reduce their housing risk, policymakers could mitigate the adverse effects on risk of subsidizing renting by targeting rental subsidies to those households that do not face much rental risk. Households with a short expected duration of stay in a home face less risk from renting and more risk from owning than do long duration renters, therefore, these households possibly could be subsidized to rent (and definitely should not be subsidized to own). Households living in stable housing markets, with not much rent volatility, face little rental risk no matter their horizon, and thus encouragement to rent would not significantly affect their housing risk. Households in industries with wages that covary positively with rents face relatively low risk as renters. Targeted incentives would thus distort risk-taking the least.

Conclusion

It is natural, given the recent volatility in home prices, for the public policy pendulum to shift from favoring homeownership to supporting renting. It is important to keep in mind that the alternative to homeownership, renting, is also risky. It is also hard to claim that one tenure mode is more or less risky than the other in any absolute sense. Rather, the risks are multidimensional and affect various household types to differing degrees.

This article focused on two aspects of housing risk: First, what is the housing cost uncertainty in the current residence? Second, what is the housing cost uncertainty if a household were to move to a new residence, or a new city? It then discussed ways in which public policy could encourage renting or, alternatively, cease to encourage homeownership, and still minimize the additional risk taken on by renters.

Because housing markets with volatile prices also tend to have volatile rents, neither renting nor owning has an inherent financial risk advantage over the other. Instead, the tenure mode affects how underlying volatility manifests itself. In low-volatility housing markets, choosing renting versus owning exposes a household to little difference in risk. In high-volatility markets, owning locks in the current residence cost but leaves the sale price uncertain whereas renting leaves the annual cost uncertain. Households with long durations of stay reduce their housing cost risk by owning rather than adopting annual leases. Owning also provides an investment that hedges housing costs after a move for households that would move within a housing market or move to a new housing market with correlated home price changes but which adds volatility if those conditions are not met. Renters are exposed to home price risk for future houses.

These risk sources for renters can be mitigated in three broad ways. The first is to help households to be sufficiently conservative financially that they can absorb volatility in housing costs. This article showed that renters tend to spend less cashflow on rent than owners do on housing costs. Many possible reasons exist for this cost difference, but it is doubtful that renting is an inherently cheaper way to obtain housing. Instead, current renters probably consume less housing than owners do. The lower amount of housing consumption provides a financial buffer against unexpected changes in rents or income. Any rental policy should avoid subsidizing additional spending on rent by renters because that would increase household risk. By contrast, the current tax treatment of owner-occupied housing provides a subsidy that increases in the amount spent on housing, encouraging increased housing consumption.

The second risk mitigation approach would be for renters to adopt positions somewhere in between the current norm of annual leases and a perpetual lease, which is like owning. Long-term leases could provide certainty about housing costs for a shorter horizon household and a possible hedge against housing costs in future markets. Housing derivatives based products could also aid renters; however, neither option has proven to be popular.

A third approach would be to target rental subsidies to those households that have low renting risks. Such targets include highly mobile households, those in low-volatility cities, and those with incomes that tend to covary with rents.

Because nearly all households either rent or own, an alternative to rental policy would be less favoritism towards homeownership. One wonders if the paucity of long-term lease contracts is due in part to crowd out from subsidized homeownership. A reduction in the subsidy to owner-occupied housing could be across the board, or it could be targeted to those households with the highest ownership risk.

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Author

Todd Sinai is an associate professor of real estate and business and public policy at The Wharton School, the University of Pennsylvania, and a research associate at the National Bureau of Economic Research.

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Rental Housing Assistance for the 21st Century

Brendan O'Flaherty
Columbia University

Abstract

Current rental housing assistance programs are not designed to provide a safety net for people whose lives are volatile, nor are they designed to encourage low-income people to live in good locations. These deficiencies can be corrected. The U.S. Department of Housing and Urban Development (HUD) should establish a program of rental insurance—like mortgage insurance, but for renters. Low-income housing assistance formulas should be revised to reward good neighborhood features, and punish bad.

Introduction

The rental housing market for lower income Americans could work a lot better than it has been working. Tenants (and the landlords who rent to them) could have more security; fewer people could experience homelessness; and subsidies could do more for the people who receive them, and for their neighbors. This article explains how. The key is thinking about security and externalities in 21st century terms—not in Great Depression terms.

This article analyzes two broad functions that government interventions in the rental housing market can perform: (1) providing a safety net and (2) generating external benefits. Our current policies perform both functions poorly: they move too slowly and too arbitrarily to insure people against most of the risks they face, and are least available precisely when most people need them most; and most of the external benefits they generate are the ones that were important in the first half of the 20th century, not the ones that matter in the first half of the 21st. This article shows how both functions can be performed better.

The perspective in this article is overwhelmingly classical. This article identifies market failures and steps that could correct them. It also identifies failures in current policies. Low-income rental housing markets would have serious problems without significant government involvement, and they can still have serious problems if that involvement is not wise.

A Better Safety Net

How It Works Now

Governments perform a useful function when they provide people with valuable insurance that markets would otherwise fail to provide. The major shocks that affect low-income people today are loss of income, loss of health, and loss of relationships (see O'Flaherty, 2009). Families insure against these risks poorly (Bentolila and Ichino, 2008; Dynarski and Gruber, 1997). Governments insure against income shocks very little (especially for adults not accompanied by children and those who have used up Temporary Assistance for Needy Families eligibility), and insurance against health shocks is far from perfect (especially against income losses that sometimes ensue from health shocks). Neither governments nor private insurers offer much meaningful protection against relationship shocks.

All these shocks indirectly affect housing markets. Low-income people primarily spend money on food, clothing, transportation, and housing; rent is generally the largest single bill they receive in a month. Rent is hard to adjust quickly and relatively easy to borrow against. Gas stations and supermarkets do not let customers leave without paying, but landlords cannot evict tenants costlessly when they miss a payment. Thus, landlords become insurers of last resort.

This ability to borrow against rent has consequences. Landlords are not good insurers, and most lack means to spread risk. So they charge too much for this insurance, they screen tenants too strictly, and they under-insure. (To the extent that landlord-tenant law forces landlords to provide more insurance than they want to, landlords charge even more and screen even more strictly.) Even large landlords with wealthy tenants find acting as an insurance company burdensome; evidence of this unwillingness is the apparent success of Insurent®, a private rental insurance company in New York City that specializes in large, high-end buildings. Tenant payment problems are correlated with the business cycle and so confront landlords exactly when those landlords face the most severe cashflow problems from vacancies and tight money. Most tenants, moreover, live in apartments owned by small landlords. Structure size and ownership do not correlate perfectly, but only 18 percent of tenants in 2009 lived in structures of 20 or more units (U.S. Census Bureau, 2011).

Current housing subsidy programs do little to mitigate the risks that low-income households face. For households who are already subsidized, rents fall when incomes fall or medical expenses rise, and so this group has good insurance. But lags are often long. Current year's rent is based largely on retrospective income, and reporting takes time. The New York City Housing Authority (NYCHA), for instance, begins gathering retrospective income information 5 months before lease renewal (NYCHA, 2008). And, of course, rents are then fixed for the term of a lease. Thus, by the end of a lease, income many months ago has more impact on current rent than income last month. NYCHA has "emergency procedures," but even these are slow. Rent can be reduced during the term of a lease for a tenant who loses a job, but only after 13 weeks.

But most low-income households are not subsidized, and the connection between their misfortunes and any housing assistance they get is approximately zero. Only if a shock lasts the very long time needed to get to the top of the relevant queue does the shock bring housing assistance, and only if the household was foresighted enough to apply early (and does not contain someone with a criminal record).

Indeed, households are least likely to get housing assistance when they are most likely to need it. A household is most likely to need help when a recession hits—either nationally or just locally. But that is when queues are most likely to be longest and help least likely to be forthcoming. (Queues in recessions are likely to be long both because many people need help and because few assisted households are moving up and making way for others. See Ambrose [2005], Hungerford [1996], and Olsen et al. [2005].)

Homeless shelters are probably the most effective safety net in the housing market now, and in locations with a rich array of shelters or a right-to-housing, they may perform this function well. But they are expensive and often demeaning. Like hospital emergency rooms, shelters are necessary but they are not a good substitute for a sound social insurance system.

What To Do

Many economists (for example, Olsen, 2008) have argued for a needs-based housing assistance entitlement program, and on many grounds such a program would be a huge improvement over the current set-up. An entitlement program could also offer much better insurance since households in distress would not have to queue for assistance, and funding would automatically expand in recessions so that access would not become harder.

Entitlement programs have several drawbacks, however. Bureaucratically, they would be ill equipped to deal with volatile income, health, and relationships, although perhaps good information technology and careful design could create a nimble and fast system. Current rationed housing assistance programs have small work disincentive effects (Ludwig and Jacob, 2008; Olsen et al., 2005; Shroder, 2002; Susin, 2005; Tatian and Snow, 2005), but if program entrance were more closely tied to income, these effects might be larger. Current programs probably have significant sharing-disincentive effects (Ellen and O'Flaherty, 2007; Sinai and Waldfogel, 2005), and an entitlement program would have these effects, too, unless it were restructured to be sharing neutral.[1] And entitlement programs could be expensive (although Olsen [2008] showed some controversial ways that their costs could be considerably reduced, but does not require sharing-neutrality, which any sensible program would have).

Rental Insurance Basics

The most straightforward way to provide insurance is to provide insurance, and it is likely to be the cheapest way too. The federal government already insures mortgages through the U.S. Department of Veterans Affairs (VA) and the Federal Housing Agency (FHA), and mortgage-backed securities through the government-sponsored enterprises (GSEs) (although this last role may not be continuing). Under some circumstances, this insurance costs the government nothing, although, of course, those are not the circumstances that obtain now. Rental insurance markets might be a good way to reduce risks in this market.

[1] Programs have sharing disincentives when they give larger per person subsidies to smaller households. Almost all existing HUD programs have sharing disincentives. Programs are sharing neutral when the size of the subsidy is not affected by the number of adults one shares housing with. See He, O'Flaherty, and Rosenheck (2010) for a discussion of possible reasons for sharing disincentives and evidence that these reasons are not supported empirically.

The basic idea is that a tenant pays a small insurance premium when she leases an apartment. If some predetermined event like a job loss, divorce, or major illness occurs during the term of the lease and makes it impossible for her to keep up with the rent, the insurance kicks in and pays the landlord a fixed amount (say $500) for a fixed number of months (say 6 months). After the tenant stabilizes her life, the government might seek some repayment, but probably not full repayment. As mentioned, at least one private profit-making company, Insurent in New York, sells rental insurance now, and so the concept is not totally infeasible.

What are the benefits of such insurance? Landlords could relax their screening criteria, require smaller deposits, and charge lower rents; all tenants would benefit. Tenants who encountered setbacks would have breathing room to resolve their problems, or to reduce their consumption deliberately. Social agencies and homelessness prevention services could receive informative advance warnings and possibly target their activities better. Children might not have to move so often, and the length of assistance could even be targeted to the school year. Shelters would see fewer families who were temporarily down on their luck.

This rental insurance program would not insure against rapid rises in the market price of rental housing. The moral hazard problems would be too great. Fortunately, rent shocks do not appear to be a major risk that poor people face or a major direct precursor to homelessness (O'Flaherty, 2009).

Why Not Just Make Other Safety-Net Programs Better?

Is rental insurance just a weak and politically expedient substitute for a more generous social insurance system, one with larger cash payments and more sensitive triggers? No. Two sets of market failures make rental insurance desirable in itself.

The first and probably most important market failures are the external costs of homelessness and of instability for children whose parents do not fully internalize their academic progress. Because of these external costs, the government has an interest in maintaining a tenancy even when a household head would prefer to use the same amount of money for some other purpose, even ex ante.

The second market failure is the inability to write enforceable contracts promising the payment of rent. Partly this inability arises from state landlord-tenant codes that make instantaneous eviction impossible; but even without these codes, few landlords would evict all tenants who were a few days late on the rent and promised to pay next week. Because such contracts are not available, some Pareto-improving tenancies never occur. (An equivalent insurance contract would compensate landlords for tenant delinquencies. This contract also appears to be unavailable.)

Some might argue that tenancies can be long-term relationships with flexible prices, and so all mutually beneficial insurance arrangements can be worked out over time. But tenancies can become long-term only if they are allowed to become so, and all tenancies start short. Hubert (1995) and Miceli and Sirmans (1999) showed that serious adverse selection problems prevent first-best contracts from being negotiated in tenancies that have a chance of becoming long-term, essentially because incentive-compatibility constraints need to be satisfied. Benjamin, Lusht, and Shilling (1998) estimated that tenants who are liquidity constrained and cannot make security deposits borrow effectively from landlords at an annual interest rate of around 30 percent.

More deeply, the people who are going to lose their jobs or get sick are going to do these things no matter where they live (to a first approximation). Some landlord is going to have to bear this cost. The time and energy that landlords devote to screening for this possibility is pure waste from a social perspective, since the only goal is to make some other landlord bear this cost instead of themselves. It is just a game of hot potato. Similarly, the distorting contract menus designed to combat adverse selection create obvious deadweight social losses, but are useful only for playing hot potato. Whether they combat adverse selection well or not is irrelevant, as long as they are costly.

In this sense, by making landlords less concerned with where people are living when adverse events occur, rental insurance can promote efficiency. A formal analysis of this issue has not been done yet, and would be helpful.

On the other hand, rental insurance might work against efficiency by decreasing geographic mobility—"locking in" people to the wrong locations when, for instance, jobs have shifted elsewhere. These efficiency costs, however, may not be large, since rental insurance payments would probably last less than 6 months, and migration decisions often take longer than that.

Why Can't Private Firms Provide This Insurance?

Maybe they can, but because of the external costs of homelessness and instability, they would have to be subsidized.

Rental insurance markets, however, are likely to suffer from adverse selection. Prospective tenants are likely to have private information about their health and employment situation, and so may small landlords. Landlords also have private information about the channels through which they recruit tenants.

Subsidies offset adverse selection, and a private subsidized insurance scheme might be viable. But it might be better for HUD to start a program with a large, mainly involuntary base built in. For instance, apartment buildings and multifamily homes with FHA or GSE backing might be required to purchase such insurance. The history of mortgage insurance shows that sometimes the government needs to get a market started.

What About Moral Hazard?

Like every other kind of insurance, rental insurance will cause some moral hazard problems. Designing intelligently can reduce the size of these problems when they occur.

On the landlord side, the obvious behavioral response to rental insurance is to loosen screening standards. This loosening may be desirable, in part to reduce homelessness. Nor is it obvious that markets produce optimal screening standards. Screening by landlord A affects the pool of prospective tenants that landlord B sees, and hence the standards that landlord B finds it optimal to adopt. So the social costs of moral hazard on the landlord side may not be particularly big.

On the tenant side, several behavioral responses may occur. Tenants may seek higher quality and higher rent apartments because they have less to fear if something goes wrong; they may also seek riskier jobs because they have less to fear if the job falls through. The social costs of these behavioral changes may not be large. On the other hand, tenants may work less diligently at their jobs

or take less good care of their health. This behavioral response is a real concern, but the amounts involved are modest and the clawback provisions can be adjusted to offset this behavior.

Fraud may also occur, of course. Landlords, for instance, could invent fictitious tenants. A lot needs to be learned about how to run these programs right.

Who Is This For?

Rental insurance is a complement to existing HUD low-income assistance programs, not a substitute for them. These programs have a variety of goals, and this article cannot comment on all of those goals. Unlike these existing programs, however, rental insurance is meant to be an entitlement, and so should be one way of mitigating the unfairness of denying assistance to some households while giving large amounts of assistance to other households that are in no obvious way more deserving.

Because rental insurance is an entitlement, HUD-assisted tenants should be able to purchase it. This new activity would make HUD's current programs work a little better. Currently, the risk of tenant nonpayment is borne by public housing authorities and a multitude of investors and landlords. Many of these are unsophisticated, risk averse, and geographically undiversified; many of them also worry about cash constraints at times of recession. Rental insurance for HUD-assisted tenants shifts some of this risk to the national level, where it can be handled much better. A more efficient allocation of risk should reduce the per-household cost of these programs (including any losses from rental insurance), and allow them to serve a few more households.

Should rich people be eligible for rental insurance, too? Probably they should be: healthy people are eligible to buy medical insurance. Whether tenants need the help depends on their current circumstances, not their past circumstances, and eligibility rules have to be based on past circumstances. But if federally sponsored insurance is losing money and rich people are heavily involved, the subsidy should be reduced so that private companies can enter the market. The danger in operating a program without explicit income guidelines is that it might be relatively more attractive to rich people than poor. If this were to happen, the program parameters could be adjusted in cost-neutral ways to make it more attractive to poor people and relatively less attractive to rich—for instance, by reducing upfront premiums and raising clawback percentages.

Of course, rental insurance is not ready for wide-scale adoption yet. To learn about how it works, starting with specific groups defined by hard-to-change characteristics would be informative and probably productive. For instance, young adults aging out of foster care and returning veterans are two groups that often have trouble finding and keeping apartments. Rental insurance could open doors for them with landlords who might otherwise fear rent delinquencies, and provide social agencies with early warning signs of trouble.

Summary

Designing a practical rental insurance program is tough. Many parameters and details must be chosen carefully and consistently. For many questions, experience will have to be the only guide. Some relevant experience is available to draw on: Insurent, the VA's mortgage insurance program, and the emergency payment systems that some social service agencies run all have some similarities to rental insurance. But real experience can be acquired only through real experiments.

Better Neighbors

The basic low-income housing subsidy programs were designed many years ago to address the problems that bothered people then. Structural conditions seem to have been the major concern. If people lived in homes that were too small, or too drafty, or without enough sunlight, or without proper water and sewer connections, they and their children would not be healthy, physically or morally. Their ill health would spread by contagion and crime. So the entire society would gain by improving the structural conditions of the housing of the poor. Thus, public housing in the 1930s and even Housing Choice Vouchers (HCVs) in the 1970s contained strict rules about structural characteristics but almost no rules about location.

Times have changed. Structural quality of unsubsidized housing stock has improved tremendously, especially at the bottom of the distribution. The rest of the nation has become more concerned about how well low-income children read, and less about whether they have tuberculosis. The general public worries about diabetes and fast food outlets, not polio and poor ventilation. Crime remains a great concern, but the causes are seen less as inadequate sunlight and more as inadequate role models.

The externalities, in other words, now come more from location and less from structure. A complete study of subsidized housing location externalities in this sense has never been done, and may be impossible to do. However, something is known about some of the relevant parameters.

This section looks at how housing location affects what kind of citizens residents are or become—the traditional focus of housing policy (especially ownership policy). Health, jobs, and education will be the focus in this section. The third section briefly considers two other possible externalities of subsidized housing: how it affects the value of neighboring properties, and how tenant selection affects the cost of other public programs. The final section is about crime, which brings all of these issues together.

This article concentrates on very specific, measurable externalities. Broad questions like whether subsidized housing should be in wealthy neighborhoods or minority neighborhoods will not be addressed. An enormous amount has been written on these questions, yet no consensus on the answers exists. Consensus exists, however, on more direct issues like carbon monoxide, particulate matter, bad schools, and long commutes; and we can put rough numbers on these costs. This article will concentrate on these areas because the science is pretty well known. It is easier to think about trees than to think about forests.

Health

Basic Empirical Results

Recent empirical work in health economics establishes a few fairly strong links from location to health. Currie, Neidell, and Schmieder (2009); Currie et al. (forthcoming a); and Currie and Walker (forthcoming) found that higher carbon monoxide levels induce greater school absenteeism and poor infant health outcomes, even at low levels. Living close to traffic congestion is bad for kids. There is also substantial evidence that particulate matter is harmful. (These dangers seem to

be quite localized, with impacts measured in hundreds of feet; census tracts are too coarse.) Currie et al. (forthcoming b) found that children with more access to fast-food restaurants were more obese.

Exogenous Nuisances

First, suppose that the location and intensity of noxious sites are fixed and exogenous. Then the role of housing policy is to discourage people from living near them. (The next section examines the more realistic case of endogenous nuisances.)

In a perfectly functioning private housing market, fixed noxious sites would be no problem. Housing consumers, realizing that living near these sites was harmful, would lower their bid-rent by the full amount of the damage. No houses would be built near the noxious sites if the lowered bid-rent were not enough to pay for structure and to bid the land away from nonresidential uses. If houses were built, the residents would be compensated for the harm by lower rents, and the landowner would bear the damage cost.

Subsidized housing as it is now run short-circuits this adjustment. To a large extent, the rent that a landlord receives is independent of the attractiveness of the location.[2] This holds whether the landlord is a public housing authority (PHA) or a private landlord with HCV tenants. Everything else being equal, the absence of location in the subsidy formula is an incentive to place subsidized tenants in the worst possible locations. For supply-side projects, this is because land is cheapest (hence forgone property taxes are the least) in those locations. For HCV tenants, this is because the opportunity cost of renting to a subsidized tenant is least there. Thus, we expect current assistance programs to do worse than the market would in promoting tenant health, not better.

But even doing as well as the market does is not good enough. Tenants do not pay the full cost of poor health, and parents do not fully internalize the health of their children (especially in the long run). Tenants may also not be aware of the best current research. The argument for subsidized housing can only be that it does a better job than the market.

(That is why the many exceptions to the picture of complete independence of rent from location amenities do not change the basic picture. Landlords of HCV tenants with rents above Fair Market Rent [FMR] receive the full value of any change in bid rent at the margin, and so will locate away from nuisances, at least those that are smaller than the difference between actual rent and FMR. Developers planning developments that include both market-rate units and subsidized units like HOPE VI will bear the cost of nuisances to the extent that part of the project is unsubsidized at the margin, but they will bear only a fraction of the true cost.)

Can current housing assistance programs be revamped so that they do the job they should be doing? The answer is yes and the strategy is obvious: make the federal subsidy depend on how healthy the location is. For most programs, the subsidy should decrease dollar-for-dollar with the increase in the total cost of health-related problems associated with the site. For instance, the penalty per housing unit for a project located near a congested highway should equal the sum of private health costs the tenants will bear because of their exposure to the highway (their willingness to pay to

[2] To be fair, HUD also requires that housing authorities determine that units rented by families assisted under the HCV Program have rents that are "reasonable" in comparison with similar unassisted units in the market area. So, landlords cannot automatically charge the fair market rent for all units.

be free of the morbidity and enhanced mortality associated with the pollution) plus the medical costs that third parties and governments will bear. The same penalty is relevant for HCVs where the tenant is not paying anything on the margin. For HCVs where the rent is greater than FMR, the landlord is already bearing some of the health costs; the penalty should equal only the external costs in this situation (although "external" may, for instance, include most of children's costs).

Notice that nothing in this proposal necessarily raises or lowers aggregate subsidies. HUD can either penalize unhealthy locations, reward healthy locations, or do a combination of both. Some combination will be expenditure-neutral. In some ways, this proposal just asks HUD to calculate FMRs in a way that recognizes location, not just structure: the FMR for an apartment in a lousy location is not the same as the FMR for an apartment in a great location, and HUD should recognize this.

This basic proposal does not specify whether changes in subsidy should manifest themselves as changes in payments to landlords or changes in rents paid by tenants. As further complications are introduced, this issue will be resolved.

One may also ask whether this problem would be better addressed by rules than monetary payments. HUD uses rules to establish minimum structural standards, which every subsidized housing unit must meet; why not use minimum location standards too? There are many interesting economic arguments around this question in general, but in this case the advice of practicality is pretty direct. A very large fraction of currently assisted housing would probably fail any minimum location standards that HUD could with good conscience promulgate. Rather than mandate healthy living, this proposal "nudges" tenants and landlords toward it.

Endogenous Nuisances

The previous argument treats the locations of noxious activities as fixed. The locations are not fixed, and efficiency may require that the noxious activities move or lower the intensity of their operations. Nuisance corrections in housing assistance formulas make these efficient outcomes more likely.

Consider first a Coasian world. The Coase theorem implies an efficient outcome if the parties can bargain costlessly. Efficiency still fails in the current system because children and third-party payers of medical costs are affected parties who are unlikely to take part in any bargaining with the nuisance source. Nuisance corrections in this sense set the table properly for Coasian bargaining.

Transactions-cost reasoning also implies that nuisance corrections should affect landlord payments, not tenant rents. If the landlord internalizes all the nuisance costs that the tenants (and others) bear, she becomes the proper person to negotiate with the nuisance source; the free-rider problem is mitigated or eliminated.

Much of this Coasian reasoning carries over into a world where nuisances are regulated by state and local governments, not by Coasian bargains. A landlord who has internalized the nuisance externality has good reason to lobby for stricter regulation of the nuisance, since she will gain from any mitigation. Big landlords and PHAs often lobby well.

(An alternative approach would be for HUD to tax nuisances near subsidized housing. Efficiency would be achieved if nuisance sources could pay subsidized housing decisionmakers not to locate near them. Such a system would probably be legally and administratively unworkable.)

Tenants Without Subsidies

Imposing a system of nuisance corrections will have three possible outcomes for any apartment that is now subsidized.

The first outcome is that it continues to be subsidized. In that case, no efficiency is gained, unless the nuisance is abated, since the physical fact of harm will continue.

The second outcome is that the apartment ceases to be subsidized, but continues to be a residence. In that case, there is no efficiency gain either; only the name of the household being harmed is changed. But the landlord bears the private cost of the nuisance in lower rent, and so has a greater incentive to bargain or lobby for abatement than a subsidized landlord under the current system does (although not as great as a subsidized landlord in the improved system would have).

Finally, nuisance corrections may cause the site to be abandoned for residential use; it might become a parking lot or a warehouse. This is clearly an efficiency gain if the nuisance is large and cannot be abated; it cuts exposure.

Thus, under any outcome there is potential for efficiency gains. The fact that under some circumstances nuisance corrections will only change the name of the household getting sick does not vitiate the scheme's utility. Over time, moreover, the efficiency effects are likely to grow: for instance, as stores or single-family houses are built where multifamily subsidized housing might have been built.

Equity

Are there equity impacts as well as efficiency impacts? Definitely, but they depend on many important details of how the programs are implemented and how the market responds.

If the nuisance is abated, there are likely to be equity gains as well as efficiency gains. The people the nuisance would have been harming are low-income, and those who bear the ultimate cost of abatement are probably not all low-income. In many cases, moreover, the nuisances are local public bads, and so their abatement may benefit unsubsidized households as well as subsidized, at least until rents adjust. If the nuisance is not abated, but the area it affects becomes a parking lot or warehouse, the equity implications are similar.

If the nuisance is not abated and subsidized tenants continue living next to it, there is little equity impact. Taxpayers gain and the landlord loses if the subsidy goes down.

The case where the nuisance is not abated and unsubsidized tenants replace the subsidized tenants is slightly more complicated. The equity implications depend on how the subsidies account for externalities—whether the reform punishes unhealthy locations relative to the status quo, or rewards healthy locations. If the reform raises average subsidies by rewarding more than punishing, then the gap in well-being between subsidized and unsubsidized tenants widens—a result that is probably undesirable from an equity viewpoint—and landlords gain at the expense of taxpayers. If the reform punishes bad locations instead of rewarding good ones, on average, the result is the opposite, generally. This is what you would expect intuitively.

How does this work out on the ground? Consider a reform that only rewards good locations. The subsidized tenant moves to a healthier apartment because the new apartment's landlord is now willing to accept the larger subsidy HUD is offering. The nonrecipient who would otherwise be renting that apartment is worse off, and possibly less healthy, too. The landlord of the new apartment is better off. Some nonrecipient ends up in the old apartment, but it is not known whether that nonrecipient is healthier or not, since it is not known where that household would have been living otherwise. So in this case, the gap between recipients and nonrecipients widens.

In the other case, when the reform punishes bad locations, the subsidized tenant leaves an unhealthy apartment because the landlord can get more from an unsubsidized tenant than from the subsidy. The new unsubsidized tenant is no worse off than she would have been in the absence of the reform, and probably is better off, because she moved willingly from her old apartment, even though she may be less healthy. The subsidized tenant is living somewhere else and is probably healthier, but it is not known whether she is better off or not. In this case, the gap in well-being between low-income recipients and nonrecipients does not necessarily widen, and nonrecipients become better off. Existing subsidized landlords lose.

Job Access and Commuting Cost

The arguments about job access and commuting cost are similar to the arguments about health and need not be repeated. In the private market, apartments with better job access and lower commuting costs command higher rents, and so land prices absorb these advantages. Subsidized landlords realize no such premium, at least in the short run, and so have little incentive to choose locations that are near jobs or more convenient commuting. HUD is likely to do worse than the market.[3]

The solution is for HUD to pay greater subsidies for apartments with better job access (calculations very similar to those involved in such subsidies can be found in Fisher, Pollakowski, and Zabel [2009]). Note that HUD should compensate for external benefits of job access, too, such as increased taxes, reduced commuting, better role models for others, and psychological well-being (Phelps, 1997).

Education

To the extent that educational quality depends only on school inputs, observed or unobserved, the same logic applies to health and job access. HUD should pay landlords more for apartments near great schools, less for apartments near lousy schools, and the correction should be greater than the premium that the private land market reflects, because education produces considerable external benefits. PHAs and landlords under such a system would become active advocates for better schools. (They have little or no stake in good schools now, and so school districts with large amounts of subsidized housing do not feel the same sort of economic pressure to perform well that other school districts feel.)

[3] Private owners of subsidized rental housing typically retain a right to convert their development to market-rate housing after the subsidy expires.

Education, however, is more complicated than health or jobs. Peers may matter, not just school inputs, for both cognitive and noncognitive outputs. Yet the U.S. Department of Education seems dedicated to developing measures of school quality, independent of student body composition, and so HUD can use their conclusions. It is important for this program that the measures of school quality be independent of student body composition. The purpose is not to induce the children of subsidized tenants to run away from other low-income children.

The interesting question in this case is whether the subsidy should depend on what the inhabitants of the apartment do. Should a PHA be rewarded for locating senior housing in a great school district, or be penalized for lousy neighborhood schools if most resident kids go to good charter schools? Since the goal is to spur education, not to imitate the land market, the penalty or reward should depend on the actual children and the actual schools. This promotes efficiency. A PHA, for instance, faced with poor neighborhood schools will decide for itself whether to try to improve these schools or give its residents incentives to send their kids elsewhere. Buildings closest to the worst schools will end up being predominantly for seniors, as they should be.

Other Kinds of Externalities

Effects on Neighbors

Subsidized housing affects the value of surrounding properties. John Quigley reviews the literature that examines this phenomenon. To the extent that the external benefits are the same across locations, they are an argument for subsidized housing per se, not for any changes in formula. But if the external benefits differ in different settings, then HUD subsidies to landlords should reward settings that are more beneficial to neighbors.

These externalities interact with those previously discussed. If PHAs or subsidized landlords become advocates for cleaner air, more frequent bus service, and better schools, the neighbors will gain too. Subsidized housing tenants may also gain if neighboring properties are more valuable—for instance, they may be less likely to be rented to fast-food outlets or to be taken over by drug-dealers. This is only speculation, however.

Tenant Selection

Who receives subsidies can also affect what taxpayers are asked to cover for other programs and how other citizens experience the world. The big issue here is homelessness. A tenancy that reduces homelessness is more valuable than one that does not, *ceteris paribus*. Since homelessness is intrinsically hard to predict and because existing tenant selection processes are formalized, basing payments on probability of homelessness is not likely to be a good idea. But practices that alter the mix of tenants in the direction of high-homeless-probability people should be encouraged. The best predictor of future homelessness is current homelessness, and so landlords and PHAs should be encouraged to select tenants from shelters and streets (through programs like Housing First). They should also be encouraged to serve more single nonelderly adults, since most homeless people are single non-elderly adults (another reason why tenant-subsidy formulas should be sharing-neutral). Current income may not be terribly accurate as a predictor.

Crime and Safety

Concerns about crime and safety have dominated discussion of subsidized housing during the last two decades. This article begins with the easy issues and progresses to the harder ones.

Long-Run Criminogenic Influences

The traditional concern in housing discussions has been how the circumstances under which children grow up affect their propensity to commit index crimes in adolescence and adulthood.

The strongest result on this score is that exposure to lead in childhood is very bad (Reyes, 2007) (for reasons of education as well as crime). Children can be exposed to lead in paint and lead in the atmosphere. HUD guidelines that prohibit leaded paint—a structural issue—are thus a major crime-fighting tool. Since leaded gasoline was phased out in the 1980s, the author is unaware of how atmospheric lead concentrations vary. It would be good to know this. Treating atmospheric lead as a nuisance in the ways described in the section on health could thus cause a long-run reduction in crime, if there still are meaningful differences in atmospheric lead concentration.

Another strong result is that education reduces future crime (Lochner, 2010; Lochner and Moretti, 2004). The steps outlined in the section on education therefore reduce crime.

Aside from these two results, there are no other strong results about childhood experiences that cause future criminality. In particular, nothing about architecture, poverty concentration, or public housing seems to make kids grow up to be criminals.

Thus, to reduce long-run criminality, HUD should continue to be vigilant about structural lead paint, penalize atmospheric lead, and reward good schools in the ways that have been discussed.

Short-Run Criminogenic Influences

Other neighborhood features may increase or decrease the total volume of crime more immediately. Landlords should be rewarded for locating in neighborhoods that have good features, and penalized for locating in neighborhoods that have bad features.

Unfortunately, not a lot is known about what these good and bad neighborhood features are. Numerous papers report an association between liquor stores and bars on the one hand and crime on the other, and many assume that churches help to reduce crime. Yet, no hard evidence exists demonstrating that these property uses actually shape levels of crime. (Gyimah-Brempong (2006) tried to connect liquor stores and crime but did not have a convincing identification strategy.) Wilson and Kelling (1982) argued that visible disorder in a neighborhood (for example, broken windows) encourages crime, but this hypothesis has not fared well empirically (Fagan and Davies, 2000; Harcourt and Ludwig, 2006). DiTella and Schargrodsky (2004) showed that police patrol reduces crime in a natural experiment. But police patrol levels are usually correlated with unobserved features that increase crime—police patrol more in dangerous neighborhoods—and so it makes little sense to reward landlords in neighborhoods with greater police presence.

Dahl and Della Vigna (2009), however, found that violent movies tend to incapacitate violent people while they watch them, and that these people do not compensate fully for the period of

incapacitation after the movies. Perhaps landlords should be rewarded for locating near theaters that show violent movies.

In general, incentives should be based on evidence, not speculation. Hence, only violent movies should even be considered at this point as a short-run criminogenic influence.

Short-Run Neighborhood Effects

"Not in my backyard" (NIMBY) fits in this section. People who live in subsidized housing may tend to commit more crimes than wealthier Americans, and so their unsubsidized neighbors may be upset about their presence. Perhaps victimizing neighbors may be an external cost of subsidized housing that should be internalized.

This reasoning, however, is incomplete. Suppose that some subsidized tenants have a high propensity to commit index crimes against their neighbors. Moving them from neighborhood A to neighborhood B hurts the people in neighborhood B, but helps the people in neighborhood A. To the extent that the location of subsidized housing affects merely the location of crime, not its volume or severity, it should be of minimal social concern (although it could affect proper allocation of police resources). (An analogy is domestic violence: to a first approximation at least, where a family is living when a domestic violence incident occurs is of no concern.)

It is possible to offer various hypotheses about the type of neighborhoods where crime should be highest, but there is little empirical evidence about the causal influence of neighborhood conditions. For instance, bringing low-income people into a rich neighborhood might increase burglary because there is more to steal, but it might decrease motor vehicle theft because cars are more likely to be in garages at night. White neighborhoods might encourage robbery because evidence suggests that White people are less likely to resist, but research finds that Black people tend to carry more cash, making them potentially more attractive targets (O'Flaherty and Sethi, 2008). Dense neighborhoods present more criminals with more targets but also confront them with more potential witnesses.

The Moving to Opportunity (MTO) experiment sheds some light on this issue, but not much. Young men who moved to richer neighborhoods committed a few more crimes than those who stayed in lower income neighborhoods, and this evidence suggests that richer neighborhoods are relatively criminogenic in the short run. But the net change in crime in either set of neighborhoods is not known (the extent to which crimes committed by MTO teens would have been committed by someone else if the MTO teens were not around). Nor does MTO tell us much about older potential criminals.

Until more research is done, then, it seems best to consider criminal effects on neighbors as essentially a wash in social terms.

Index Crime Between Tenants

The same conclusion applies to index crimes between tenants. If some prospective tenants are likely to commit crimes against their neighbors, it does not matter who their prospective victims are: HUD has no stake in deciding who the victims are. (Indeed, fairness suggests that

if HUD should protect someone, it is those low-income people who are not lucky enough to receive subsidies; hence, HUD should not be eager to encourage potential criminals to move into neighborhoods with the unlucky low-income people who do not get subsidies, as seems to be the consequence of the "one-strike" policy, for instance.)

Street Vice

Street vice means illegal commercial transactions involving a willing seller and a willing buyer, where the seller deals with many buyers, but has ongoing relationships with few of them, and where buyer and seller must come together in close physical proximity (O'Flaherty and Sethi, 2010). Open-air, anonymous drug selling is the variety of street vice that receives the most attention, and presents special issues for HUD.

Street vice is a business (and almost certainly a business smaller than clandestine, relationship-based drug-selling) that locates where it is most profitable to locate.[4] O'Flaherty and Sethi (2010) set out several reasons why street vice tends to be concentrated in African-American neighborhoods, even though drug demand is not concentrated in these neighborhoods.

Within any neighborhood, the best locations for street vice depend on physical features that have not been studied—perhaps easy access to highways or clear sightlines in many directions, for instance. Hence, in many neighborhoods, HUD-assisted housing, particularly public housing, may be among the best locations for street vice. It would be good to know this for sure.

Some clear solutions to this problem would be legalizing most currently illicit drugs or subsidizing the development of good substitutes. Such a program, however, is not within HUD's purview.

This situation presents two kinds of problems for HUD.

One problem is how to reduce street vice in developments that have not been built yet. Obviously, research needs to be done on the structural and locational correlates of street vice. Future developments should be designed with these in mind.

To some extent, of course, better architecture will just shift street vice to less lucrative locations; if that were the case, the investment in architecture would be misdirected. As long as the supply of street vice sites is not perfectly elastic, however, there will be real effects. While the elasticity of demand for illicit drugs is low, it is not zero, and the elasticity of demand for anonymously purchased illicit drugs is almost certainly higher than the overall elasticity of demand (Becker, Murphy, and Grossman, 2006). Hence, making HUD's buildings less attractive places for street vice may not just dump the externalities on someone else. (Clandestine drug sales have considerably lower external costs than anonymous sales.) Moreover, to the extent that HUD-assisted developments are more densely populated than other neighborhoods where street vice might locate in the same city, moving street vice away from these developments reduces the external costs that street vice produces, even if the total volume does not change.

Buildings that have already been built present a different issue. Street vice is a neighborhood blight just like air pollution, and so the basic response should be to reduce landlord subsidies when

[4] For estimates on the relative size of the clandestine drug market, see O'Flaherty and Sethi (2010).

street vice is occurring nearby. The difficulty with this approach is measurement: people cannot be rewarded or punished for something that is not credibly and verifiably measured. Arrests, for instance, are evidence of action being taken against drug-selling, not of street vice or even drug-selling. HUD, however, could employ testers to try on a random basis to buy drugs anonymously in or near assisted housing, or subsidize local police departments to do so. Testing programs might create big risks for landlords if they sampled too little, and would be very expensive if they sampled too much; the definition of "near" would also produce other tradeoffs. But sampling programs are a straightforward attempt to provide the right incentives, and so some decent tradeoff might be found.

Maybe a better measurement strategy would be to look at reported violent outdoor index crime (excluding rape and domestic violence) and shootings in the vicinity of HUD-assisted housing. This is actually measured, and may be closer to the thing that should be measured. The external costs of street vice are the problem, not street vice itself, and so landlords should have incentives to minimize these costs. (As technology becomes cheaper, HUD might want to install shot-monitoring devices on all assisted housing; this could serve deterrence as well as incentive purposes.)

One-Strike Rules

Direct incentives like these are likely to be more effective than one-strike rules because they address the real problem—index crime and street vice near HUD-assisted housing—rather than some variant—index crime and street vice by HUD-assisted tenants. No known serious empirical evaluation of one-strike rules has ever been attempted, and theory suggests that their effectiveness is probably tiny.

To understand the theory, consider this scenario. Suppose that Congress were dominated by vegetarians who had not studied basic economics. To discourage meat-eating, they order periodic surprise raids on McDonald's restaurants. In these raids, they detain all the employees. Any HUD-assisted tenants among the employees are evicted immediately; other employees are blacklisted so they may never receive HUD assistance in the future.

What does this policy do? It raises the price of hamburgers a little bit and raises the wage of McDonald's employees, but many substitutes for HUD tenants and aspiring tenants are available, and so the effect is not large. Most importantly, it does not substantially change the locations that McDonald's chooses for its restaurants. If McDonald's found it profitable to put a restaurant near or inside a HUD-assisted project before the vegetarians took over, it would almost certainly continue to find it profitable.

Since it appears that labor is supplied to street vice pretty elastically (Reuter, MacCoun, and Murphy, 1990), the drug-selling one-strike rule should have the same effect on street vice locations—approximately nothing. That is why a serious empirical evaluation would be helpful. (Essentially, the question is whether the elasticity of land supply to anonymous drug-selling is less than the elasticity of labor supply to anonymous drug-selling.)

The current one-strike rule, moreover, imposes real costs on tenants and prospective tenants—breaking up families, for instance. Treating young single adult minority males as pariahs contributes to many social problems that have large external costs—homelessness and homicide, for instance. In thinking about the role of subsidized housing in the larger society, HUD may want to move toward a more goal-oriented and less soundbite-oriented policy. Landlords in a goal-oriented regime may very well bar felons in many cases, but they would be doing so for real reasons.

Conclusion

Not all these goals need to be accomplished immediately. Just remember that a safety net today is different from a safety net in the 1930s, and externalities today are different too. All the rest follows.

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Author

Brendan O'Flaherty is a professor at Columbia University.

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Rental Housing Assistance

John M. Quigley
University of California, Berkeley

Abstract

The worst-case housing needs of low-income households arise largely from their high rent burdens, not from physically inadequate housing. Thus, the programs of housing assistance for these households initiated in the Great Depression should now be recognized as a part of the nation's welfare system, not as an infrastructure investment program. This paper considers the most important implications of these facts for the design of housing assistance programs and for the administration of housing subsidies.

Introduction

Should the public sector provide assistance to very low-income renters? Of course it should. For three quarters of a century, the federal government has provided assistance to low-income renters, beginning with the Public Housing Act of 1937 and extending to the most recent budget proposal of the U.S. Department of Housing and Urban Development (HUD). It is also difficult to imagine that some form of assistance to low-income renters would not be available in the future.

This brief article discusses the rationale for programs that provide renter assistance, the choices about the possible forms assistance may take, and the ways of judging programs' success. Not surprisingly, none of this discussion is about what can be done tomorrow. Instead, it is intended to be relevant to strategic choices by the executive and legislature over some longer time horizon.

Why Subsidize Rental Housing?

Why should the federal government take an active role in policies of subsidizing rental housing? The initial rationale for the provision of public housing during the Great Depression was the acute shortage of decent housing coupled with the recurring unemployment of the time. An unemployment level twice as high as the current rate, along with a lack of effective demand arising from a calamitous recession, launched a program of government-sponsored housing production.

With the post-war boom in the American economy, the comprehensive Housing Act of 1949 emphasized the goal of providing a suitable living environment and decent, safe, and sanitary

housing for all Americans. Improved housing conditions formed the rationale for subsidy policies, and progress could be measured by noting the extent to which inadequate housing was eradicated. In 1975, about 2.8 million renter households lived in severely inadequate housing, representing almost 11 percent of renter households. By 2001, the number of inadequately housed households (by Housing Act of 1949 standards) declined by 60 percent (Quigley and Raphael, 2004). This number has subsequently declined by another 15 percent. The fraction of renters living in severely inadequate housing was less than 3.5 percent of the population in 2004, and it is now below 3 percent. Among dwellings that are affordable to the poorest households (those earning less than 30 percent of the median income of the local area), the fraction of severely inadequate housing was about 5.3 percent in 1999, according to the Bipartisan Millennial Housing Commission (2002). Among dwellings affordable to low-income households (those earning between 50 and 80 percent of local median income), the fraction classified as severely inadequate was 2.9 percent. More than a decade later, physically inadequate housing is certainly a concern for some households, especially the poorest renters. But even for the very poorest households, less than 5 percent of those who pay less than 30 percent of their incomes on rent live in severely inadequate housing conditions.

Thus the maintenance of housing quality (decent, safe, and sanitary housing) does not provide a very convincing rationale for extensive public subsidies for rental housing in the 21st century. Indeed, this seems to be recognized now (at least implicitly) by politicians, scholars, advocates, and interest groups. For example, the worst case housing needs, reported by HUD to Congress (HUD, 2000), emphasize high rent burdens as the source of worst case housing needs. In 2000, the Senate directed HUD to compile and report the extent of worst case housing needs annually. Because the extent of substandard housing is so small, these reports are essentially estimates of the fraction of households in various demographic groups paying more than one-half of their incomes for rent and estimates of the fraction of households living in overcrowded conditions. Worst case housing needs have evolved into another way of describing poverty.

Affordability is clearly the most compelling rationale for polices subsidizing rental housing. The high cost of rental housing, relative to a low-income household's ability to pay for housing, leaves these households with few leftover resources for expenditures on other goods—such as food, clothing, and medicine—which are also necessities. Because housing represents a large share of household expenditures in market-based economies—for the middle class and the poor—small changes in the rent burdens that households face can have large effects on their levels of well-being. Improved well-being, along a variety of dimensions, will almost certainly arise if housing programs provide increased discretionary resources to recipients by reducing their rent burdens. In addition, rent burdens are reduced if recipients of housing assistance choose to spend proportionately less of their transfers on housing relative to other necessities. The affordability of housing is certainly a legitimate rationale for housing subsidy policies. Indeed, as noted previously, it seems to be the only surviving rationale for a large-scale subsidy program for rental housing in the United States.

This perception suggests that rental housing programs for low-income households ought to be thought of as a part of the U.S. welfare system—in the same way that we think of income transfers, food stamps, and the Earned Income Tax Credit (EITC) as components of that system. Receipt of food stamps has a miniscule effect on the food consumption of poor households (the transfers are inframarginal), but the program frees up household resources for consumption of other necessities.

Transfers for housing assistance have positive effects on housing consumption (they are not quite inframarginal), but their principal success is a reduction in the high rent burdens that recipient households face.

Some consider this welfare system to be inferior to a system that instead transferred unrestricted cash to poor households. But it is hardly unreasonable to suppose that donors' preferences place more weight on the food and shelter available to the poor than upon the other consumption items available to them. Others may note that since transfers are largely inframarginal, they do not distort recipients' choices very much.

This perspective highlights the most conspicuous failure of the current system of historically evolving housing subsidy programs—the horizontal inequity accorded to similarly situated, otherwise identical, households. Under current programs, qualifying households obtain rental housing subsidies through some random process. Households apply for housing assistance through local housing authorities. Despite widespread presumptions to the contrary, virtually all local authorities have long waiting lists. Indeed, in many housing authorities, waiting lists themselves are often closed. This means that qualifying households can wait years before obtaining rental assistance. Independent housing authorities have their own systems for ranking eligible households. Most authorities adopt some sensible procedure for granting priorities, but selection onto the waiting list and selection from the waiting list has many of the characteristics of winning the sweepstakes.

Compare this procedure with the process of obtaining food stamps or medical assistance under Medicaid. Households are deemed eligible on the basis of income, household size, and other demographics (such as disability), and all eligible households qualify for assistance. The only form of welfare assistance that is awarded under the sweepstakes model, rather than the eligibility model, is rental housing. And, as noted previously, housing expenses consume a large fraction of low-income households' incomes. So the inequity of the sweepstakes model is even more glaring. A fraction of eligible households receive a large subsidy. A larger fraction of eligible households receive no assistance. The distribution is capricious.

For example, Currie (2006) reported that under current rental subsidy policies, more than 70 percent of households below the poverty line are not served, and more than 40 percent of the households who are served are not in poverty. A couple of years ago, it was reported (Quigley, 2008) that less than one-third of renters with incomes below 30 percent of the local median received housing assistance, and less than one-fifth of renters earning between 31 and 50 percent of local median received housing assistance.

Could Anything Really Be Done?

Maybe nothing can be done to correct this imbalance, but something closer to equitable assistance for poor renters could be achieved if the eligibility rules for housing subsidy were made more realistic and if the program were financed using the successful models employed in other U.S. housing subsidy programs.

First, eligibility rules for rental housing assistance would need to be tightened. Under current law, households with incomes below 80 percent of the Area Median Income (AMI), adjusted for

household composition, are eligible for rental housing subsidies. In 2006, this average cutoff income was about $52,000 for a family of four (Quigley, 2008). At that time, eligibility for food stamps for four-person households was confined to those with incomes less than one-half as large ($25,000). Eligibility under the EITC program was limited to households (with one or more children) earning one-third less per year ($37,000). Eligibility for rental assistance would have to be tightened considerably to replace a national lottery program with a broader and more equitable program for housing assistance for very low-income renters.

Objections exist to the labor supply implications of adding another income-based entitlement program to the array of federal policies. Much of this concern seems misguided, or else simply rationalizes opposition to a more transparent and universal housing assistance program.[1]

Second, a broader program would require additional support outside the community of housing advocates and professionals, and the continuity of the program would be problematic. One way to increase political support, and to reduce administrative costs as well, would be to follow the politically successful programs of subsidies to homeowners and subsidies to builders for the construction of low-income housing. (New construction of low-income housing is discussed further in this article.) These programs use the relatively efficient systems of the Internal Revenue Service (IRS) to determine eligibility and to distribute the benefits.

Currently in the United States, the multibillion-dollar home ownership subsidies are distributed largely by the IRS. Individual taxpayers need not report the dividend (that is, the imputed rent) on owner-occupied housing. Interest and property tax payments are deductible as personal expenses, and capital gains on sale are accorded special treatment in the computation of tax liability. (Jaffee and Quigley [2007 and 2010] provide estimates of the costs of these provisions. The costs are large.) The distribution of these subsidies to qualifying households is relatively painless. The subsidy is paid as a credit against the other tax liability of a homeowner. But subsidies provided under these provisions of the tax law for owner occupants are not refundable to the taxpayer.

In contrast, EITC is fully refundable to the taxpayer. Eligibility for the credit can be established on line (using the "EITC assistant," for example). Alternatively, the IRS will establish eligibility and will compute the credit due—and they will also send along a check—to any qualifying taxpayer. A refundable credit is not hard to administer.

In fact, a housing program that the IRS already administers could serve as the template for a low-income rental housing subsidy program of this kind. The Mortgage Credit Certificate Program authorized by the Deficit Reduction Act of 1984 entitles selected homeowners to claim a tax credit for some portion of the mortgage interest paid in any year, rather than the tax deduction afforded other homeowners. (See Greulich and Quigley [2009] for a detailed discussion.) A taxpayer in

[1] Evidence indicates weak effects of the EITC on the labor supply of recipients (Eissa and Hoynes, 2006), and stronger effects of welfare receipt upon labor market outcomes. (See Moffitt [2002] for a review.) Less is known about the work incentives of the food stamp program (Hoynes and Schanzenbach, 2010). Fischer (2000) found small effects of housing assistance on work incentives, and Shroder (2002) found essentially no effects of housing assistance upon the employment of recipient households. Clearly, it is to be expected that any labor market distortions under a universal housing assistance program would be smaller than these estimates, not larger (because an entitlement program would undoubtedly provide a lower level of benefit, but one enjoyed by many more households).

possession of a Mortgage Credit Certificate issued by a unit of state or local government merely checks a box on his or her tax return (on line 54 of Form 1040) and submits an additional form (Form 8396, only 11 lines long) to claim the nonrefundable credit.

To claim the low-income housing subsidy under this more equitable low-income renter assistance program, the taxpayer would need to submit a form issued by a local housing authority and check a box added to the current IRS form. The additional form would certify that the household was renting a dwelling that meets the minimum habitation standards imposed by HUD. That form, together with the income reported by the household, the number of dependents in the household, and the postal address of the household, would be sufficient to compute the low-income renter subsidy payable to any household.[2] The computation could be made by any taxpayer (perhaps on line) or by the IRS, as is the case with the EITC. Of course, H&R Block or any other commercial tax preparer could also make the computations. The private sector would have an incentive to help administer the program.[3]

The appropriate credit could be mailed in monthly installments to the low-income household, to the local housing authority for distribution to the household, or to the landlord directly.

Financing the low-income renter assistance program through the IRS and administering the program through HUD may also facilitate long-overdue reforms to the tax code in the treatment of housing. For example, a revenue-neutral way to finance a low-income renter assistance program of roughly the same size as all current HUD low-income subsidies would be to eliminate the capital gains exclusion currently afforded to owner occupants when they sell their dwellings (Jaffee and Quigley, 2007, 2010). Reducing the limits on the deductibility of interest payments for high-income homeowners could easily finance a more equitable universal program. Using the tax code to support low-income renters may thus further national goals of equity in the tax treatment of housing by the federal government.

What About Unit-Based Housing Subsidies?

Viewing rental housing subsidies as part of the modern welfare system is very different from conceptualizing these subsidies as part of an infrastructure investment program—the rationale for the program 70 years ago. Ensuring equal treatment of eligible households as a part of a national welfare program is quite different from a policy of using rental subsidy funds to design and build new dwellings to be rented at below-market rents—at any conceivable budget. And the reason is obvious.

The cost of providing decent-quality housing through new construction is much greater than the cost of providing it by using the existing depreciated stock of housing. This fact is well known to

[2] It would be simple to differentiate the payment by postal code (and hence metropolitan area) if it was considered desirable to vary subsidies by the local cost of living. Most economists would probably not support such differentiation (for example, Glaeser, 1998), but many politicians might.

[3] The computations would be a bit more complicated than those under the EITC because incomes of potential recipients may vary within the year. Currently, no administrative mechanism exists in the IRS for recertifying incomes within the year (perhaps on a quarterly basis). But this duty could be assigned to local housing authorities, whose other burdens would be reduced under the proposed housing subsidy program.

builders and developers, who almost never target new construction of rental units to the bottom one-half of the income distribution. (This fact is also quite well known to slumlords, who offer small quantities of housing services to the poor, using the oldest and most obsolete portion of the housing stock.) These cost differences in shelter provision for low-income households were thoroughly documented in conjunction with the Experimental Housing Allowance Program a quarter of a century ago and, more recently, by the General Accounting Office (GAO, 2001, 2002), now the Government Accountability Office. The latter study concluded that the present-value life-cycle costs of new construction subsidies were from 19 to 38 percent more than were the costs of voucher programs for comparable housing.[4] No conceivable budget that sought to cover all renters below some income cutoff level could make provisions for the expenditures that are required to provide newly constructed housing for assisted households.

Should programs that provide unit-based housing assistance (that is, housing subsidies tied to particular dwelling units) be discouraged? Currently, a little more than two-thirds of the low-income renter households subsidized through the Section 8 program (2.2 million recipients) receive vouchers that can be used locally and which often are portable regionally. These vouchers make up the difference between 30 percent of household income and the estimated costs of "just standard" housing. In contrast, about one-third of Section 8 recipients receive equivalent financial subsidies in designated dwelling units under long-term contract to HUD. The benefits provided to recipients under the latter arrangements (unit-based assistance) are not as valuable as those provided by unconstrained vouchers. The recipient of a voucher could always choose the designated dwelling unit if it most closely matched his tastes and preferences, but the recipient of an unconstrained voucher could also choose another unit. A voucher recipient can also change dwellings in response to job changes, schooling needs, or neighborhood conditions.

Beyond these advantages to the individual recipient, the system of unconstrained vouchers provides an additional incentive for the deconcentration of low-income households in urban areas. Those who are willing to incur search costs (and perhaps other nonmonetary costs associated with integrating neighborhoods by income and race) make it easier for those searching subsequently in the housing market. None of these spatial incentives are present in unit-based Section 8 housing. Indeed, some concern exists that unit-based assistance concentrates disadvantaged renters.[5]

The imposition of geographically determined unit-based housing assistance under Section 8, instead of portable and flexible vouchers available under the same program, might be understandable—

[4] This additional cost is apparently well known, if not extensively documented. For example, the analysis of the Moving to Opportunity (MTO) experiments by Kling et al. (2007) concluded that the MTO treatments pass the cost-benefit criterion because "the MTO intervention[s] produced large mental health improvements and because other research suggests that it is cheaper to provide a unit of subsidized housing with vouchers than in a public housing project" (2007: 108).

[5] Little evidence supports the theory that supply-side housing assistance helps to disperse low-income households across neighborhoods. For example, Freeman (2004) reported that newly subsidized units created under the tax credit program are located in neighborhoods that contain a disproportionate share of Black residents. These neighborhoods also have considerably higher poverty rates, lower median incomes, and lower house values than typical metropolitan neighborhoods. It should also be noted, however, that little evidence indicates that voucher recipients use vouchers to purchase housing in better neighborhoods. Under the MTO experiment, for example, recipients of MTO vouchers were required to move to neighborhoods with much lower concentrations of low-income households. After about a year, however, a large fraction of MTO recipients moved again—to neighborhoods with higher concentrations of poor households. (See Quigley and Raphael [2008] for a discussion.)

if the former was cheap enough relative to unrestricted vouchers. But no evidence suggests that this is the case.[6] Absent a compelling rationale based on comparative costs, it would be administratively simple to unwind unit-based housing assistance over time, as contracts with landlords expire, and replace them with more flexible vouchers.

Of course, there may be circumstances in which just standard, but depreciated, units are, in fact, cheap enough to make federal leases of these units competitive with demand-side assistance—especially if these leases also reduce negative external effects. Under current market conditions, in regions with high vacancy rates and abandoned properties, federal assistance to private or nonprofit owners in return for shelter provided to low-income renters may well pass a strict welfare test. If acquisitions can be made cheaply enough, if external effects (for example, from abandoned or foreclosed properties) are large enough, a place-based subsidy program might be quite sensible, at least in the short term.

What About Newly Constructed Low-Income Housing?

The Tax Reform Act of 1984 eliminated a number of housing construction programs and, at the same time, introduced the Low-Income Housing Tax Credit (LIHTC) Program. Under the LIHTC Program, a per capita tax credit is allocated to each state to support new construction projects by private developers. The per capita tax credit was increased several times before being indexed to national changes in per capita income. Developers who have been allocated tax credits by the states sell them to private investors and invest the proceeds in building low-income housing projects. In common with the subsidy program for owner-occupied housing, the IRS administers the LIHTC Program—and, of course, neither program is subject to annual congressional appropriations.

To qualify for tax credits under the LIHTC Program, projects must ensure that 20 percent of the new units are occupied by renters earning less than one-half of the AMI or that 40 percent of the new units are occupied by renters earning less than 60 percent of the AMI. Rents in these set-aside units are capped at 30 percent of the HUD-determined income for the area (not 30 percent of the incomes of individual renters). Tax credits may be increased if the chosen neighborhood has a high poverty rate. In practice, LIHTC subsidies are often combined with tax-exempt bond finance, Community Development Block Grant funds, and other public sector subsidies. This arrangement makes it very difficult to understand the cost of the subsidy provided to the qualifying tenants in any LIHTC project. (Note, for example, the complexity encountered by Cummings and DiPasquale [1999] in their comparison of LIHTC projects over time and place.)

In the quarter of a century that the LIHTC Program has been in place, about 1.6 million units of subsidized housing have been produced. The program is successful with politicians and builders (and profitable for them as well, if the excess demand for LIHTC projects among builders is any indication). But the GAO report, noted previously, estimates the cost of subsidizing renters by building new LIHTC dwellings is about 16 percent more expensive than using vouchers.

[6] The GAO studies noted previously are not really relevant, because they compare the subsidy costs for newly constructed or rehabilitated units with those for households subsidized by Section 8 vouchers.

As noted previously, building new dwellings to subsidize low-income households is inevitably more expensive than providing equivalent housing using the existing depreciated housing stock. Thus, if this program and other public programs that construct new or rehabilitated housing for low-income households are to be justified on economic grounds, they must be justified on some other basis. The private benefits to low-income recipients are not worth the considerable cost of these programs.

Depending on the design of these projects, their scale, and their particular locations, however, specific projects may indeed provide substantial economic development benefits for the neighborhoods and cities in which they are located. Under the well-known criteria of welfare analysis, these external benefits can be approximated by the aggregate effect of any project on the property values in the surrounding area. Given the high cost of the housing subsidy in new construction projects relative to those using the existing depreciated capital stock, an external effect on local property values is a necessary condition for undertaking a project, at least using the criterion of economic efficiency.

It is surprising how little attention has been paid to the importance of these externalities ex ante, and even more surprising is how little systematic research has been undertaken on these issues, ex post. Under the LIHTC Program administered independently by the 50 state governments, no requirement exists that the external effects of proposed projects be taken into account at all. Apparently no explicit mechanism exists for evaluating external effects of the distribution of funds for the rehabilitation of public housing.

In legislation enacted in 2005, however, a statutory preference was accorded to LIHTC projects located in census tracts, "the development of which contributes to a concerted community revitalization plan." (26 USC 2005 ¶ 42) As reported by Orfield (2005: 1779), this

> "preference was never discussed in recorded debates in Congress. No mention of it appears in any legislative debate, any committee report, or in any newspaper report at the time."

Perhaps the enforcement of this provision could be monitored somewhat more closely ex ante by HUD officials and evaluated ex post by the agency.

Analyses of the importance of any external benefits of housing investments have not been prominent in the program evaluation literature, and only a small number of credible studies document the magnitude of external effects for any housing programs. Briggs et al. (1999) investigated the effects of scattered-site public housing on nearby property values in Yonkers; Santiago et al. (2001) used a substantially similar research design to analyze the effects of public housing on property values in Denver. Lee et al. (1999) investigated the effects of several housing assistance programs on nearby property values in Philadelphia, and Ellen et al. (2007) conducted a similar analysis using data from New York City.

Several research papers have analyzed the effects of New York City housing investment policies on neighboring property values (Ellen et al., 2002; Schill et al., 2002; Schwartz et al., 2006).

Apparently, only two studies, by Green et al. (2003) using repeat sales data on housing from Milwaukee, and by Ellen et al. (2009) analyzing micro data from New York, examine the effects of LIHTC projects on nearby property values. The Milwaukee study has never been published.

This work hardly represents an outpouring of research activity, and one cannot help concluding that the incentives for addressing these issues ought to be a lot stronger, especially before expensive subsidized investment decisions are made.

For the housing investment programs under HUD's immediate control—public housing programs like HOME and HOPE VI—investment decisions ought to consider carefully and weigh heavily the economic development consequences of alternative choices, not merely the housing implications.[7]

For housing investment programs that the IRS controls—principally the LIHTC Program—the role of other government agencies, such as HUD, is less clear. HUD could provide financial incentives to state tax credit allocation commissions to consider prominently the economic development consequences of their tax credit investment projects. Or HUD could provide technical assistance so that state decisionmakers would be better informed about the potential external effects of specific projects. HUD could also work more closely with the IRS to devise rules that would reward states for considering the broader development implications of their tax credit allocation decisions.

These activities to encourage the more prominent consideration of economic development in housing investment decisions would be consistent with the recommendations and exhortations of the National Research Council's (2008) analysis of the research capacity of HUD.

What Else?

Of course, not all housing problems of low-income households can be addressed by transferring resources to poor households, even if those transfers are carefully earmarked to improve housing outcomes. In addition, economic development projects that include new low-income housing are not sufficient either. Low-income households with disabled, elderly, and special needs people may not be well-served by participation in expanded voucher programs. Some fraction of the homeless population is not simply poor. These individuals and households are also disabled. They require housing in a supportive environment that can best be provided collectively by government, or at least supported by public resources and monitored by the public sector. These considerations flow from recognizing that housing subsidies are better considered as part of a welfare system, and not as an infrastructure investment program.

Finally, the vigorous enforcement of equal opportunity in housing is a precondition to the functioning of an expanded market-based voucher system for low-income renters, and continued vigilance in the eradication of those regulations that restrict locations for the construction of rental housing is also necessary.

[7] The Choice Neighborhoods Initiative announced by HUD in July 2009 may be intended to encompass economic development more generally, but at this point it is difficult for outsiders to know. The effect of HUD's housing investments on neighborhood economic development should be a very important factor in allocating scarce resources.

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Author

John M. Quigley is the I. Donald Terner Distinguished Professor at the University of California, Berkeley.

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Renting in the United States: A Dutch Perspective

Hugo Priemus
Delft University of Technology

Introduction

One positive consequence of a credit crisis is that academics and other experts shift their attention somewhat from owner-occupied housing to rental housing. All over the world, the general effects of the financial crisis on housing markets are apparent: less residential mobility, fewer home sales, lower home sales prices, and a shift in demand from expensive to cheaper housing and from owner-occupied to rental housing. Reinhart and Rogoff (2009) showed that home sales prices fell by an average of 35.5 percent during a period of 6 years in the aftermath of credit crises in the postwar era.

Priemus and Maclennan (forthcoming) are preparing to address the theme of the credit crunch and the resilience of housing systems for a special issue of the *Journal of Housing and the Built Environment*. They argue that, *ceteris paribus*, the most resilient national housing systems are usually those with a lower percentage of home-owning households. This argument seems a plausible conclusion: when, as a result of a credit crisis, the demand shifts from owner-occupied housing to rental housing, it is important to have a substantially sized, differentiated rental housing sector that is capable of absorbing the increased demand. Relatively speaking, the housing markets in Switzerland, Germany, and the Netherlands are currently faring much better than those in Spain, Ireland, the United Kingdom, and the United States.

The United States and the European Union

The European Commission has no direct political responsibility for housing. Conversely, in the United States, the federal responsibilities for housing that were introduced by the New Deal in the 1930s are still in place, albeit changed over time. Housing researchers often criticize American housing policy, but they must acknowledge that the U.S. government is much more active in the area of housing than the European Commission. Of course, most European Union (EU) member states are much more proactive in their housing policies than individual states are in the United States.

The European Commission has the potential to exert a strong indirect influence on housing markets in the EU by adopting EU environmental standards, coordinating national building regulations, and—last but not least—enforcing EU fair competition policy. The European

Commission promotes the operation of markets in general by monitoring a level playing field and by prohibiting unsanctioned state aid (Gruis and Priemus, 2008). In December 2009, the European Commission decided that housing associations in the Netherlands (landlords of socially rented housing with a 32-percent share of the total housing stock) were eligible for state aid. But state aid for housing associations is sanctioned only when they allocate at least 90 percent of all available socially rented dwellings to households with a maximum taxable income of 33,000 euros—which amounts to about 43 percent of all Dutch households. Curiously, the European Commission has currently approved this crucial rule only for the Netherlands, leaving 26 other EU countries without clear guidance.

The United States and the Netherlands

Dutch academics and politicians are somewhat bewildered by some of the features of the rental housing system in the United States. U.S. experts undoubtedly feel a similar level of bewilderment about the rental sector in the Netherlands.

The rental sector in the Netherlands covers about 41 percent of the total housing stock: of that, 32 percent is socially rented housing and 9 percent is commercially rented housing. Housing associations are nonprofit, private providers of socially rented housing. They develop and manage a housing stock with far more differentiation, a much more varied social/economic occupancy, and less social segregation and stigma than the U.S. public sector housing stock. About 95 percent of all rents are regulated, including a substantial part of the commercially rented housing sector.

Housing associations have not received property subsidies since 1995 (Priemus, 1995). Associations still invest in housing, although the economic yield is modest, starting with an upfront loss of 50,000 to 100,000 euros per dwelling. Associations finance their investments with cash flows from rents but also (and increasingly) from the sale of rented dwellings—usually to households that want to own the home and, in exceptional cases, to landlords of commercially rented housing. As a result, the market share of housing associations shrank from 42 percent in 1992 to 32 percent as of January 1, 2011, and will continue to do so in the near future.

In the Netherlands, a wide gap also exists between the opinions and policies of politicians and the findings and recommendations of experts. In 2010, the Social Economic Council (SER) Expert Commission (Priemus, 2010; SER-CSED, 2010) published a report titled *Towards an Integral Reform of the Housing Market,* which advocated a gradual increase (from 2015 through 2040) toward market rents (also in the socially rented housing sector), a gradual reduction of mortgage interest tax relief, and total abolition of the current transaction tax to make the housing market much more market compliant. To safeguard the affordability of decent housing for low-income households, the Commission argued for housing allowance equity for tenants and owner occupants alike. The Dutch Constitution, more or less, entitles housing to every Dutch household: the demand rationing effect of rent and price equilibrium is not accepted. When a housing need exists, income-related housing support will be supplied as an entitlement. One-third of all tenants are currently eligible for a housing allowance. This fraction may increase when rents rise.

Current housing policies in the Netherlands are chaotic and are not moving in the direction recommended by the SER Expert Commission. In the short term, changes to mortgage interest tax relief are not likely because the housing market is still perceived to be weak in the wake of the credit crunch. Landlords of both socially and commercially rented housing are heavily taxed (a combined 750 million euros annually) and their allowable rent increases are capped. As a result, renting out housing is simply not profitable. Investments in rental housing are expected to sour, inflicting heavy losses to the building industry and employment levels.

When Dutch experts look at the U.S. housing voucher system in relation to European policy (Priemus, Kemp, and Varady, 2005), the first recommendation from a Dutch perspective would be to transform housing vouchers into an entitlement. The housing vouchers would then shed their lottery character (see the observations by Quigley, this issue). Even so, the rental housing sectors in the United States and the Netherlands would still be worlds apart. The broad scope of Dutch housing associations will never be accepted in the United States. And a narrowly targeted, small socially rented housing sector will never be introduced in the Netherlands. In the Netherlands, a general desire to disentangle general public responsibilities from specific housing interests turns the focus to providing socially rented housing through private institutions instead of public. The housing markets in both the United States and the Netherlands would function far more effectively if tax benefits and subsidies for owner occupants were gradually phased out over a period of 20 to 30 years and if rents in both socially and commercially rented housing sectors were to reach free-market levels in the same period. Such a development can occur only if housing vouchers guarantee affordability for every modest-income household. This perspective supports the first recommendation formulated above—transforming housing vouchers into entitlements is the highest priority.

Author

Hugo Priemus is a professor emeritus at the OTB Research Institute for the Built Environment, Delft University of Technology.

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Graphic Detail

Geographic Information Systems organize and clarify the patterns of human activities on Earth's surface and their interaction with each other. GIS data, in the form of maps, can quickly and powerfully convey relationships to policymakers and the public. This department of Cityscape *includes maps that convey important housing or community development policy issues or solutions. If you have made such a map and are willing to share it in a future issue of* Cityscape*, please contact david.e.chase@hud.gov.*

Visualizing Racial Segregation Differently—Exploring Changing Patterns From the Effect of Underlying Geographic Distributions

Ronald E. Wilson
U.S. Department of Housing and Urban Development

It has long been observed that minorities are often concentrated in impoverished areas and lack access to resources such as jobs, educational opportunities, good-quality food, life services, and face other disadvantages. As such, racial and ethnic segregation is an important factor to consider when crafting public policy. A first step in many analyses of segregation is the production of single racial or ethnic group percentage maps that show geographic patterns where one group is predominant and the other is not. At lower levels of geography, such as census block groups or tracts, these percentage maps are less problematic because the size of the unit is small enough and can reveal a concentration of single racial or ethnic groups within a small area. When examining trends across the United States at the city and county level, however, the percentage mapping approach becomes disadvantageous for two primary reasons.

First, important patterns are lost when racial or ethnic percentages are the result of summed-up population counts from lower geographies and displayed on a map. This pattern loss is the result of the Modifiable Areal Unit Problem (MAUP), which has adverse consequences for data analysis

because the unit of geography changes but the observation data do not.[1] This straight summation of data has a dilution effect that can erase variation in local racial and ethnic settlement patterns in the underlying geography, leaving true levels of segregation more difficult to detect. This is a crucial point, because segregation can be more acute at the local level than across many cities or counties. When these local patterns are not apparent, incorrect assumptions can be made about larger regional segregation patterns associated with social and economic ills.

A second reason the approach is flawed is because maps drawn this way convey the assumption that segregation is the same throughout the region. Just because a racial or ethnic group is concentrated within a region does not indicate homogeneous distribution at the local level. There is a far greater direct spatial disconnect at the local level than at regional or national levels, because the mismatch between segregated populations and needed resources to maintain a certain quality of life is more succinctly separated. At the city and county levels, there is a reduction in the spatial disconnect, but the dynamics of segregation and associated problems become the cumulative result of those local effects that combine with adjacent jurisdictions and can depress the regional economy, making it less vibrant. Thus, simple thematic maps of the presence or absence of one racial or ethnic group at the national level do not depict very well the extent and magnitude of segregation and misguide the formation of questions toward uncovering the true problems associated with segregation at the regional level. Factoring in levels of local segregation within cities and counties can instead give an indication of how integrated racial or ethnic groups are across a region and the nation as a whole.

This article demonstrates an alternative approach that accounts for local-level segregation below the city and county level that minimizes the effects of MAUP. This approach shifts the context of the analysis from a solely segregation standpoint to one that also exhibits integration among racial or ethnic groups. This approach recasts regional patterns of segregation in a way that highlights other regional problems associated with the pervasive problems resulting from the concentration of minorities. This article is the first of two that examine segregation at the regional level.

The data used for this analysis are from the American Community Survey (ACS) 5-year estimates from 2005 to 2009 by the U.S. Census Bureau. Percentages and measures are derived to reveal changing patterns of segregation and integration from the factoring of local variation into the analysis. This analysis will identify not just succinct jurisdictions (cities and counties) of segregation but large areas (clusters of contiguous jurisdictions) that form subregions. The focus of this analysis is between the White and Black populations in the contiguous United States.

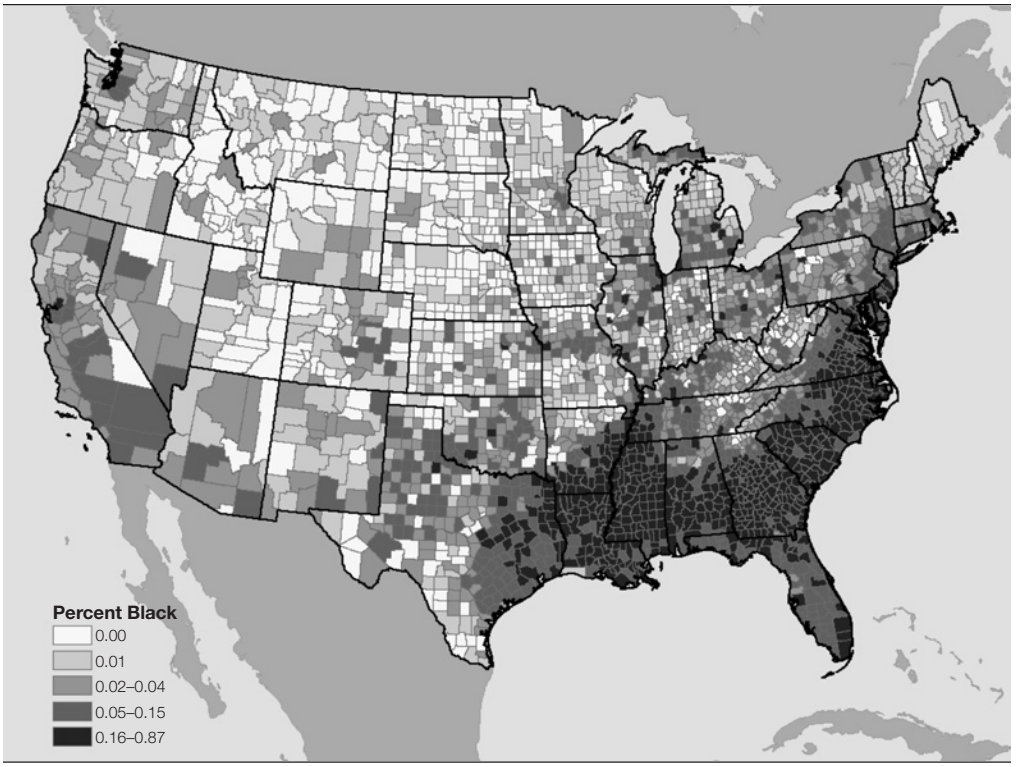
The United States has a long history of regional segregation between the Black and White populations. The Black population constitutes 13 percent of the total population with most living in 19 percent of the cities and counties across the United States. Translated into geography, the Black population primarily resides in only 9 percent of the entire country. A look at the geographic distribution of those percentages shows a very clear pattern of regional segregation (see exhibit 1).[2]

[1] For a thorough discussion of MAUP, see Openshaw (1994).

[2] See the appendix for corresponding frequency distributions for all maps.

Exhibit 1

Distribution of the Black Population for the Contiguous 48 States—Quantile Classification



The concentration of the Black population appears to form a solid belt of cities and counties from east Texas straight across the southern states and continuing up the east side of the Carolinas, ending mainly around Baltimore, Maryland. Also, several small and loosely coupled regions of Black concentrations are in the northeastern, midwestern, and western states. The north-central states are relatively devoid of the Black population.

Several problems emerge when examining segregation this way. First, this map displays only the results of one value and has no larger comparative context. The percentage is a comparative measure, only in a relative sense, as a proportion and the resulting map leaves an assumption about the distribution of the White population. It can be assumed that the White population lives in areas where there are low percentages of Blacks or the two populations are more balanced where the percentages are moderate, but this cannot be ascertained without actual values incorporated into the analysis. Second, when one group of the population is unevenly distributed across an area, a thematic mapping classification scheme must be selected that allows patterns in the data to be distinguished. In this instance, the quantile classification scheme is used because of a significant amount of variation in the frequency distribution. This scheme[3] nicely highlights clusters of like

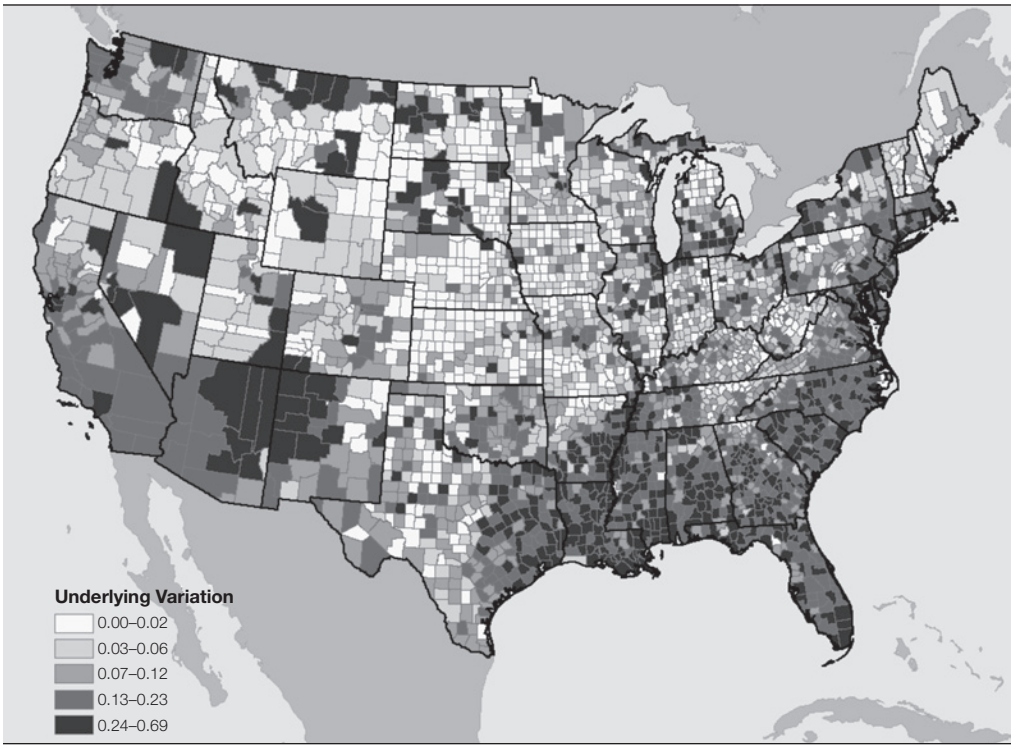
[3] The quantile classification groups equal numbers of jurisdictions into each data partition.

values but includes too wide of a range of values in the highest partition; the range of data values in this partition is exaggerated when the distribution is highly skewed. A look at the legend shows that 16 to 87 percent of the Black population is contained within that belt. A geographic pattern forms that includes many jurisdictions that do not have similar percentages. This geographic pattern is exaggerated with respect to the size of the regional concentration of the Black population, and using any of the other classification schemes does not offer a solution. The other schemes either hide patterns or create inappropriate data partitions on skewed frequency distributions. As a result of these problems, percentage maps do not communicate the message about segregation as precisely as they should; they should depict the true geographic extents and patterns of regional segregation. The final problem, though, is that city and county population counts are straight summations of lower level tallies in which variation from the lower geographies is erased by the MAUP. This summation can significantly affect the display of geographic patterns, regardless of the thematic mapping classification scheme used.

The way to get a first indication of hidden levels of segregation within a jurisdiction is through mapping local variation of percentage point differences between the White and Black populations. Variation is measured as the standard deviation of the absolute differences between the percent of the White and Black population across the underlying census tracts for each jurisdiction (see exhibit 2).

Exhibit 2

Variation of White and Black Population Percentage Differences Within Cities and Counties—Quantile Classification



The resulting data frequency distribution again requires the quantile thematic mapping classification scheme to map the data. A low standard deviation will indicate a more even distribution of each racial group across the jurisdiction because of little variation in the percentage point differences from the tracts within the jurisdiction. Conversely, a high standard deviation signifies a large variation in percentage point differences between the underlying tracts. It cannot be discerned whether or not the percentage point differences are small or large, because this method reveals only whether a variation exists across tracts within a jurisdiction.

There is a significant change in the geographic patterns compared with the single percentage map of the Black population in exhibit 1. The belt across the southern states and into the northeastern states is still present, but the pattern has become diluted, revealing a more dispersed level of regional segregation. What is revealed, however, is that many of the jurisdictions within the belt have similar percentages of the White population, indicating a more integrated population. A large regional cluster of high variation between the two groups is now present in the four-corner states of Arizona, Colorado, New Mexico, and Utah. Several small clusters of high variation between groups also now appear in the north-central states. Finally, several jurisdictions in the northeastern states have high variations in the differences between the two groups, indicating they are more segregated than shown in the single percentage map. These pattern changes hint that segregation is a localized phenomenon that varies significantly.

Although the map in exhibit 2 compares one population with another, it still does not situate either group in the context of the combined populations to determine how segregated the two groups are within a jurisdiction. Using this map makes it difficult to discern which racial group is dominant across a region, but historical knowledge of segregation in the United States, in general, is a good indicator. Nevertheless, the advantage of using this map is that it gives an indication of the differences between the White and Black populations that may prompt an examination of jurisdictions that are more segregated than others at the local level. Further, the skewed shape of the distribution continues to prevent the use of a thematic map classification scheme that can equalize the class partitions. The use of a diversity index can help alleviate these continuing problems by transforming the data into a form that addresses the previous technical and substantive issues.

Several dissimilarity and diversity index measures can be applied to data to depict levels of segregation.[4] In this analysis, Theil's entropy index[5] is used because it has mathematical properties that are sensitive to disproportionality changes between two or more groups that matches the theoretical aspects of changes in segregation levels in place. The resulting index allows for an examination of segregation between the two groups in comparison to the total population between them (see exhibit 3).[6] More importantly, with the re-expression of data, the equal interval classification scheme can be used, because the variation across the full range of values has been reduced and standardized. This scheme partitions data values into equal ranges and is not affected by the distribution of the data. This grouping makes the ranges comparable with each other and, subsequently, affects the map by limiting the geographies in the highest partition to those that are truly different with respect to what is being analyzed, which, in this case, is the levels of segregation of the Black population.

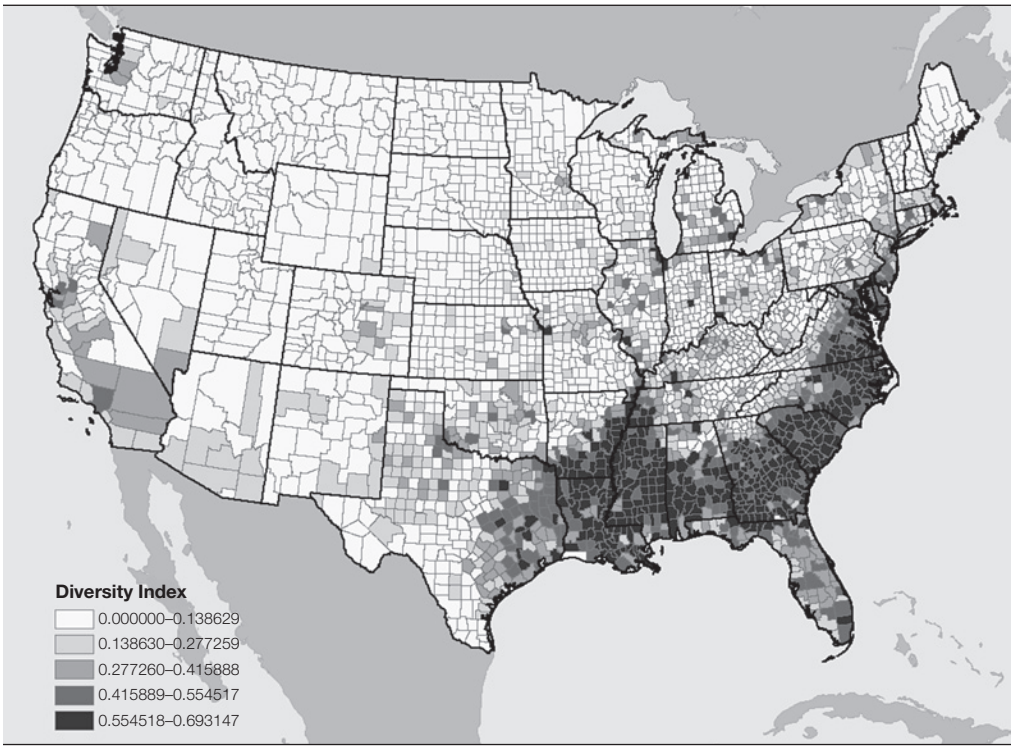
[4] For a full analysis of several common indexes, see Reardon and Firebaugh (2002).

[5] For the mathematical details of Theil's entropy index, see the appendix.

[6] Values closer to 0 indicate more segregation and values closer to 1 indicate more integration.

Exhibit 3

Diversity Levels of Cities and Counties—Equal Interval Classification



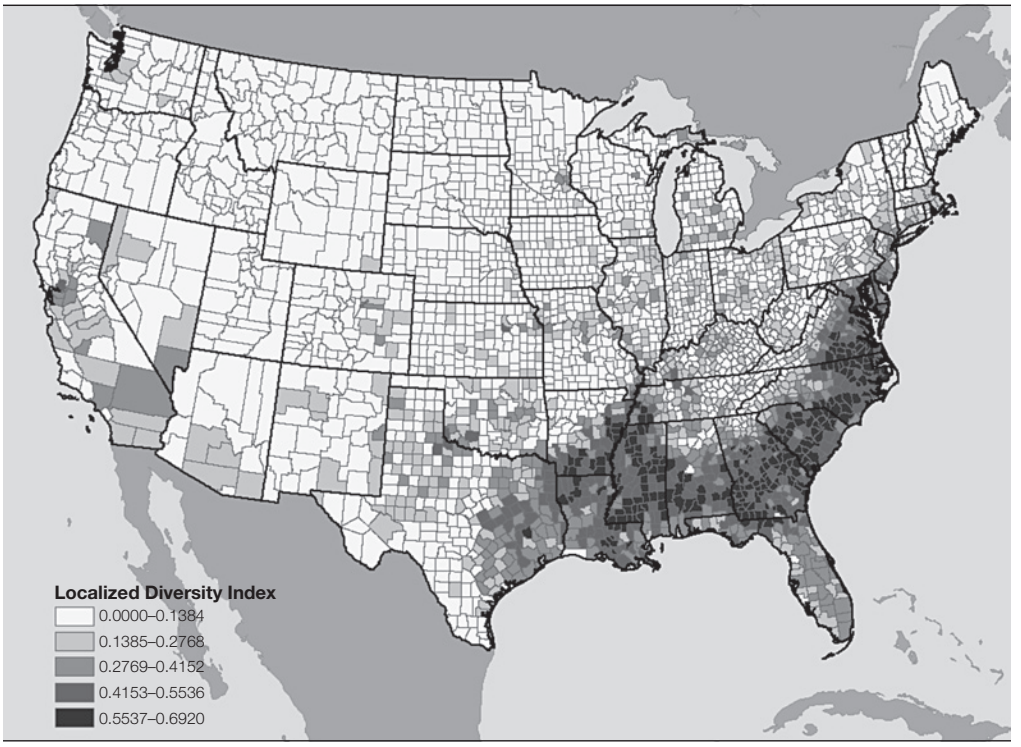
The map in exhibit 3 has three distinct advantages over the original percentage map in exhibit 1. The first advantage is a more succinct regional segregation pattern. The index has produced values that express the magnitude of difference between the two groups based on how integrated each group is in comparison with the total population of each other. The regional belt of Black population concentration from east Texas to northern Maryland is still prevalent but has been thinned out and slightly broken up. The concentration of the Black population is now in 14 percent of the jurisdictions across the United States, a reduction of 5 percentage points from the percentage map in exhibit 1. The index, however, detects levels of segregation only between two groups and does not indicate which group dominates on either end of the range. Again, a historical knowledge of the distribution of racial groups in the United States will indicate which group is more dominant in a particular region. The second advantage is that the map more accurately shows where the two groups are segregated and integrated. Many jurisdictions have indexes that are in the upper partitions of the distribution with several states in the belt showing a significant level of integration between Whites and Blacks. With this map, Florida is much more distinguishable as being segregated within the state because the index values show greater variation. Third, the remainder of the jurisdictions across the United States continues to be widely distributed, but the indexes are now in the lowest partition compared with the percentage map in exhibit 1. The exception is California, in which several jurisdictions have indexes in the middle partitions indicating a greater level of statewide segregation.

An interesting result is that the cities of Chicago, Detroit, St. Louis, and Indianapolis show up in the highest partition, indicating a high level of integration between the two populations, although it is well known that they are very segregated cities. The previous results are still subjugated to MAUP, because the data used at the city and county levels demonstrate a loss of information because the population counts used are summed from the underlying geography. This same effect is also likely occurring in many other jurisdictions; this likelihood is of concern. To compensate for this effect, the diversity index can be adjusted for the underlying local segregation between the two racial groups across the census tracts contained within a jurisdiction.[6] (See exhibit 4.)

The main observation in exhibit 4 is that the belt that stretches across the southern states and up the east coast has thinned out more and broken apart, forming small regions of integration with a coherent pattern of regional segregation. This map is more accurate because the two populations have been placed in context with each other and local levels of segregation have been factored in. The concentration of the Black population in exhibit 4 is now in 8 percent of the jurisdictions across the United States. Two specific examples exemplify the corrective adjustment the localized index makes. In exhibit 3, Chicago, Detroit, Indianapolis, and St. Louis each has an index in the highest class, which indicates that it is very integrated between the two populations. The adjustment

Exhibit 4

Localized Diversity Levels of Cities and Counties—Equal Interval Classification



[6] For mathematical details of the localized diversity index, see the appendix.

for local variation minimizes the effect of the MAUP and shifts the index to a level that is more reflective of the segregation in the underlying geography. A similar instance is in Bibb County, Alabama, which is located south of the city of Birmingham in the center of the state. This jurisdiction is now an island of high segregation within a region of high integration in the surrounding jurisdictions. The city of Birmingham, which is just northeast of Bibb County, was also reduced from the highest partition to the middle and now matches the surrounding counties, all of which remained in the same partition after the adjustment. The two jurisdictions now stand in stark contrast to each other. The variation across the rest of the United States is further attenuated, indicating a more realistic portrait of much of the county having little in the way of a Black population. In addition, the original percentage map in exhibit 1 showed that nearly all jurisdictions in Mississippi were in the highest partition of the Black population. Mississippi now has clear interior geographic patterns of segregation and integration. The geographic patterns in the underlying variation in exhibit 2 also revealed this trend, but the effects of the quantile thematic mapping scheme made it unclear whether the changes resulted from a wide range of high and low values being partitioned together. Also, the racial groups in exhibit 2 were not within the context of their combined populations. California still maintains several jurisdictions with indexes in the middle partitions with little adjustment for levels of segregation previously.

Exhibit 4 contains several pieces of information that were not available in the original percentage map of the Black population in exhibit 1. The original percentage map in exhibit 1 showed a limited aspect of segregation, which was just a continuum of percentages of where the Black population was and was not located. That map also did not situate the Black population within a context of another population for comparison and account for local segregation. The final map now meets several elements of excellence in statistical graphics that are not in the single percentage map.[7] The final map more accurately identifies core areas of segregation and reveals systemic and anomalous patterns that facilitate the exploration of factors associated with segregation such as regional poverty, education, or economic deprivation. Further, because the data have been standardized, a more direct comparison can be made with those factors in and between specific cities or counties. More informed questions can be developed about spatial connections with the local levels and the broader region in which they sit. The use of a diversity index, localized or not, is much more analytically robust and brings out several aspects often hidden in single percentage maps.

The main point of this article is to push thinking away from simple percentage maps of segregation at the national level. As the United States becomes a more diverse nation, the percentage maps become more misleading about segregation and its association with related social and economic ills. The Graphic Detail article in the next issue of *Cityscape* (volume 13, number 3) will take this analysis further and examine the variation in segregation in the context of economic activity areas.

[7] Tufte (1983).

Appendix

Diversity Index (Theil's Entropy Index)

Theil's entropy index is formally defined as:

$$Diversity_j = \sum_{j=1}^{J} \pi_j \log\left(\frac{1}{\pi_j}\right) \quad (1)$$

where j is a jurisdiction and is π proportion of each racial group in jurisdiction j.[8] The result is D_j, which is a continuous value that ranges between 0 and $\log\left(\frac{1}{\pi}\right)$. Values closer to 0 indicate higher levels of segregation by one group or the other. Higher values indicate greater levels of diversity between the two groups.

In the context of place, the result is a nonlinear curve in which each unit increment or decrement along the scale has a different rate and magnitude of change. Values on either end of the curve have different qualitative meanings. Geographies are not simply the additive sum of their assets.[9] The addition of each new asset transfers benefit in such a way as to compound that benefit to a greater degree as assets are accumulated through the increased combinations among other assets. The converse is also true. As assets are removed from a place, the decline compounds the negative effects. Social, economic, and political behavior reacts to place changes and further induces other positive or negative effects, depending on whether assets are added or removed. A linear function does not capture this dynamic, because a constant is applied that produces no change in the rate or magnitude of the curve and only shifts the curve up or down uniformly. Lack of any change in the shape of the curve would represent a static impact on a place from assets being added or subtracted with no compounding effect, which is theoretically and empirically not supported.

This reexpression is due to the log function standardizing values by confining them to consistent range with each other. Logarithms applied to skewed data compress values in the lower tails while systematically enlarging values in the middle and in the upper tail. In particular, the *natural log* (as used in the entropy index) preserves the dispersion of the distribution in the transformed data, making it comparable to the original distribution given they are approximate each other. This preservation permits the multiplication of π_j with the log of π_j to produce a meaningful result, because values close together in the original distribution remain close in the transformed distribution. The spreads between the two distributions have been stabilized so they can be added together to create the index from appropriately scaled components to produce a meaningful result. Using a transformation that does not preserve the dispersion would result in the multiplication of mismatched original and transformed values of the same unit and distort the resulting curve.

In addition, outliers are made more prominent through the multiplication operation and are scaled relative to the other values in the lowest and highest classes. Large outliers are amplified so that the

[8] For a review of the mechanics of this index, see Wong (2003).

[9] An asset is defined as (1) developmental, (2) commercial, (3) recreational, (4) physical, and (5) social, where a greater combination of each asset leads to an improved quality of life.

group at the upper end and small outliers at the lower end do not significantly increase beyond their original value.

Localized Entropy Index

The localized index adjusts for lower level geographic variation and is formally defined as:

$$\overline{Diversity}_j = \left(\sum_{i=\Omega_j}^{J} N_i * D_i\right) / \left(\sum_{i=\Omega_j}^{J} N_i\right) \quad (2)$$

where $\overline{D}$ is now the average level of diversity of all tracts in jurisdiction j accounting for the variation, Ω is the number of tracts in jurisdiction j, N_i is the total population of the two racial groups in tract i, and D_i is the same index in equation 1 but applied to each tract i. The two population groups for each tract i are multiplied by the local diversity index individually and summed up to jurisdiction j, forming a local interaction effect that weights the diversity commensurate with the size of the population of the two groups. The interactions capture the variation at the local level before the result is summed to the jurisdiction, thus adjusting for local levels of segregation. After the interactions are summed up for each jurisdiction, the result is rescaled back to the relative size of the total population of the two groups to create an average level of diversity. Now $D_j \geq \overline{D}_j$ and preserves all the mathematical properties and interpretations from the original diversity index but is now adjusted for underlying geographical variation of segregation.

Frequency Distributions

Each appendix exhibit number corresponds with the respective map exhibit number in the main body of the article (for example, exhibit 1 corresponds with exhibit A-1).

Exhibit A-1

Distribution of the Black Population for the Contiguous 48 States—Quantile Classification

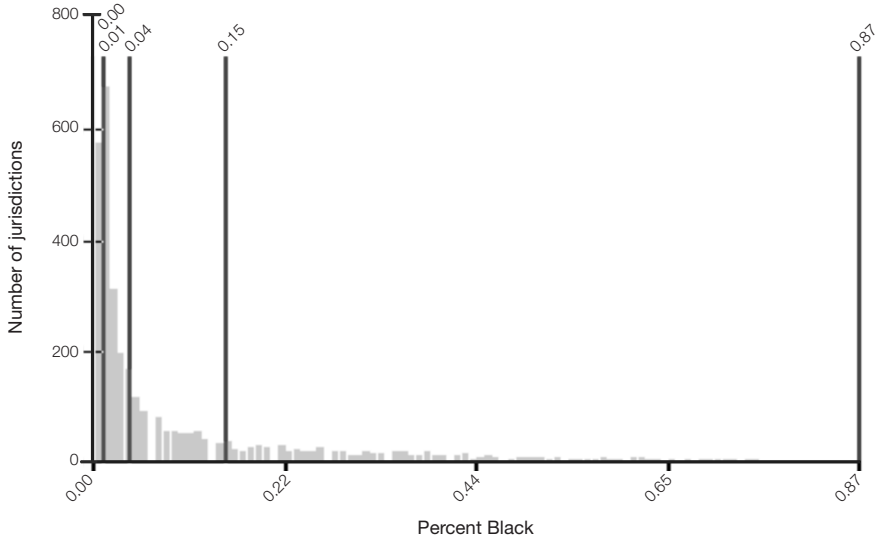


Exhibit A-2

Variation of White and Black Population Percentage Differences Within Cities and Counties—Quantile Classification

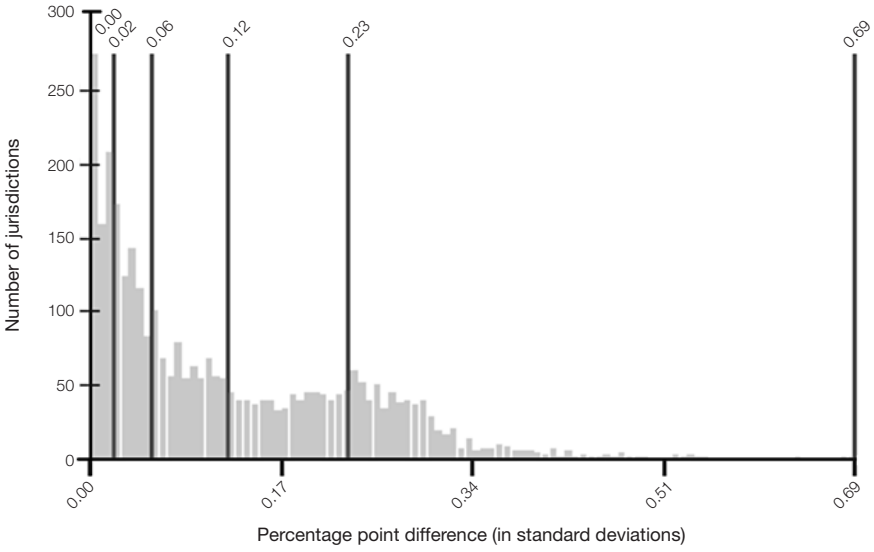


Exhibit A-3

Diversity Levels of Cities and Counties—Equal Interval Classification

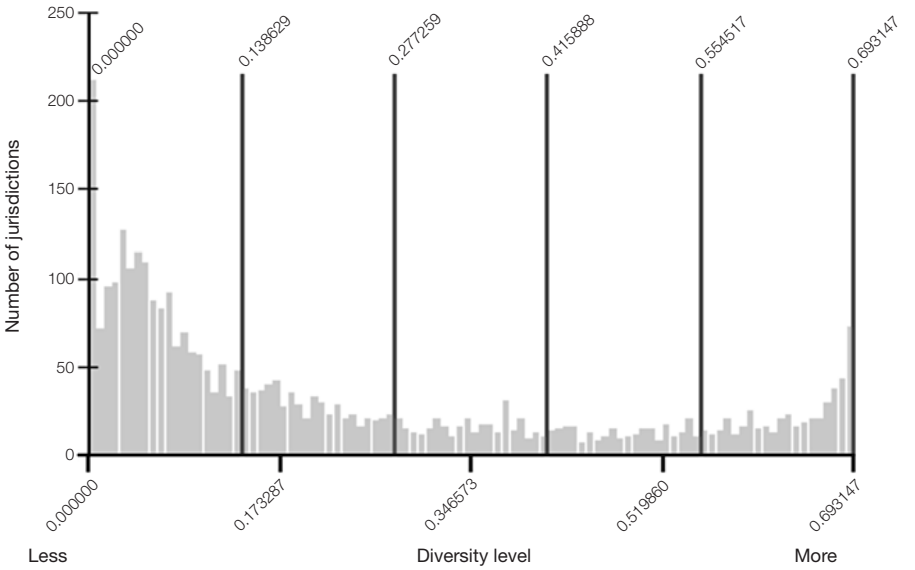
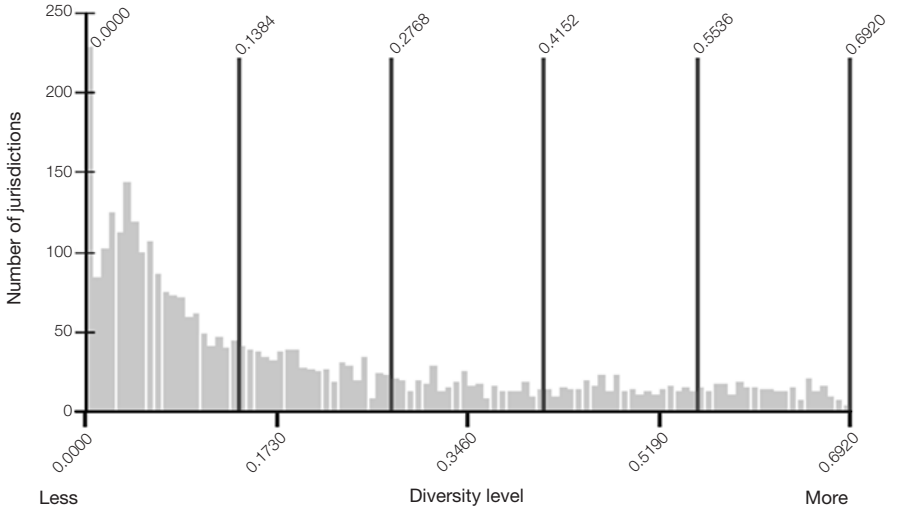


Exhibit A-4

Localized Diversity Levels of Cities and Counties—Equal Interval Classification



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The views expressed in this article are those of the author and do not represent the official positions or policies of the U.S. Department of Housing and Urban Development.

Author

Ronald E. Wilson is a social science analyst in the Office of Policy Development and Research at the U.S. Department of Housing and Urban Development.

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Data Shop

Data Shop, a department of Cityscape*, presents short articles or notes on the uses of data in housing and urban research. Through this department, PD&R introduces readers to new and overlooked data sources and to improved techniques in using well-known data. The emphasis is on sources and methods that analysts can use in their own work. Researchers often run into knotty data problems involving data interpretation or manipulation that must be solved before a project can proceed, but they seldom get to focus in detail on the solutions to such problems. If you have an idea for an applied, data-centric note of no more than 3,000 words, please send a one-paragraph abstract to david.a.vandenbroucke@hud.gov for consideration.*

Separating the Good From the Bad From the Ugly: Indicators for Housing Market Analysis

Brian A. Mikelbank
Charlie Post
Cleveland State University

Introduction

In the years before the current housing crisis, the Urban Center at Cleveland State University regularly produced housing indicators for the city of Cleveland, Ohio, and other geographic subareas within the Cleveland metropolitan area. As the housing market deteriorated into crisis, traditional market price and volume indicators became less useful, and analysts at the Center faced the fundamental challenge of determining what was occurring in these local housing markets.

Many local jurisdictions are undoubtedly exploring this same, uncharted territory. Those who analyze local housing markets need to gauge the (sometimes volatile) health of that market. Although national and regional indicators (for example, the S&P/Case-Shiller® Home Price Indices) are available for analysis, they provide no information on *local* market performance, and information at the municipal or neighborhood level is often crucial to making strategic planning decisions.

This article presents four lessons the Center learned about Cleveland's local housing market and the data and tools used to identify the lessons. Although these approaches may not be as useful in every market, they may serve as a starting point for similar analyses and discussion.

Lesson #1: Geography Matters

Actually, geographic submarkets matter. Within Cuyahoga County, Cleveland and its suburbs are the broadest submarkets analyzed. Exhibit 1 shows the unadjusted median price for these submarkets since 1976, which is an indicator we update regularly. The exhibit illustrates three important trends. First, the median price in the city of Cleveland is typically about one-half of that in the suburbs. Second, despite the simplicity of this split (city versus suburbs), the comparison reveals distinct market features, as do subsequent divisions of the market, whether they are individual suburbs or city/suburban neighborhoods. Third, the recent price changes that motivated concern among city and suburban residents are obvious.

The analysts' data task for exhibit 1, which was straightforward, involved receiving the transaction data directly from the Cuyahoga County auditor. Attributes included in the data were sales price, parcel number, and address, including municipality. The only necessary recoding was identifying all non-Cleveland sales as suburban.

Tracking foreclosure filings became a near-obsession among analysts in our region. Exhibit 2, which includes an additional geographic submarket of interest in Cuyahoga County—east versus west, shows the number of foreclosure filings on single-family properties among the four resulting submarkets—east, west, city, and suburb. It reveals a substantial east/west/city/suburb divide in the pattern of foreclosure filings—the problem is not simply between the city and the suburb. Further, although attention was largely focused on the city of Cleveland, particularly its east side, single-family foreclosure filings in the suburbs generally outnumbered those in the city, on both the east and west side.

Exhibit 1

Median Single-Family Home Sales Price, Cuyahoga County, Ohio, 1976–2010

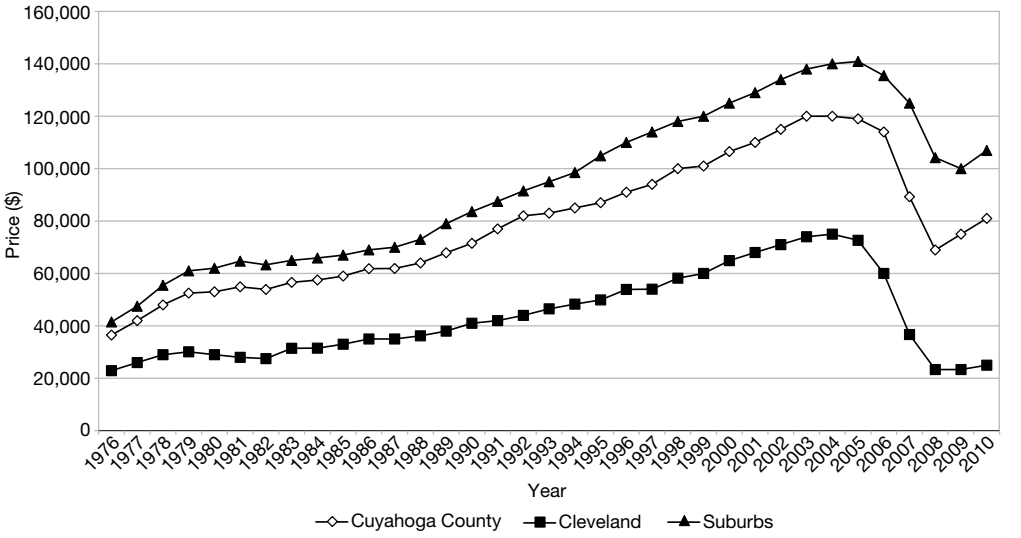
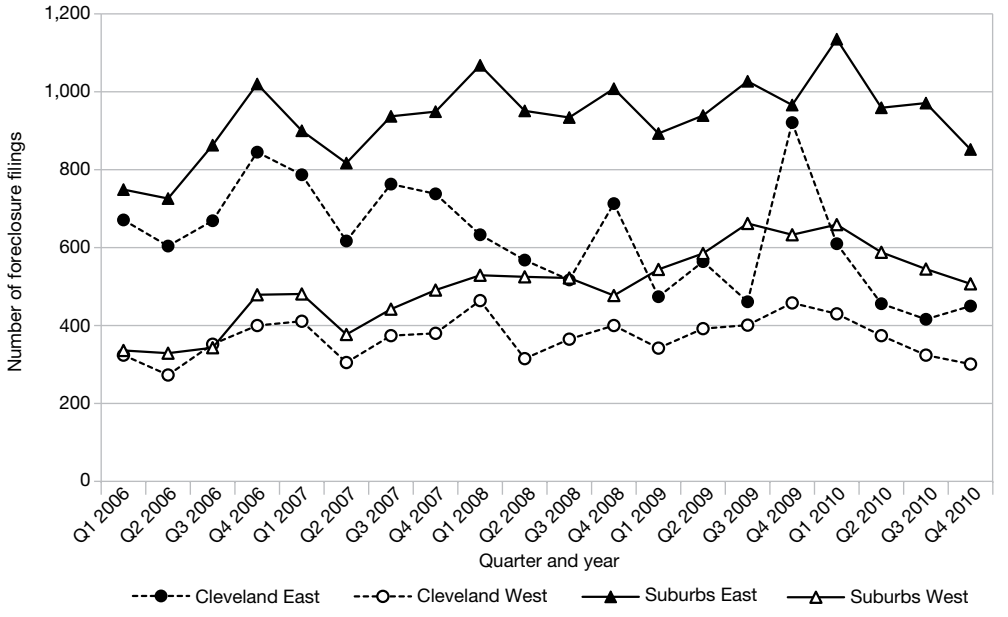


Exhibit 2

Single-Family Home Foreclosure Filings, Cleveland, Ohio, and Suburbs, East and West, by Quarter, 2006–2010



Foreclosure filing data are available online through the Cuyahoga County Clerk of Courts. They include the filing date and parcel number. This analysis used parcel number ranges to assign parcels to neighborhoods and municipalities, which themselves are designated as east or west side.[1]

Lesson #2: The Market Is Fundamentally Different Now

What many people failed to realize about the trends illustrated in exhibit 1 was that, although the price of the median sale had dropped, in some cases dramatically, the median sale itself had changed. Before the crisis, the median single-family house sale was an arms-length transaction between owner-occupiers. During the crisis, the median sale is much more likely to be a distressed sale, one affected directly by foreclosure. Thus, analysts at the Center identified, and examined separately, these two markets. They defined a sale as "directly affected" by the crisis if one of the following conditions was met:[2] (1) the sale was a sheriff's sale, (2) the house had sold at a sheriff's sale in the past 2 years, or (3) the house had a foreclosure filing against it in the past 2 years.

[1] These geographic assignments can also be made through geocoding in a Geographic Information System.

[2] In this article, we do not address the question of indirectly affected houses, which occur when foreclosed houses affect the sales price of surrounding houses.

If the sale met none of these conditions, the analysts considered it to be not affected by the crisis. Exhibit 3 shows the percent of single-family home sales that fell into the directly affected category by year. In 2004, when prices were at (Cleveland) or near (suburbs) their peak, the percentage of affected sales hovered near 35 and 10 percent, respectively. As the percentage of affected houses climbed, house prices declined, and, by the first quarter of 2009, 85 percent of the sales in Cleveland and two-thirds of the sales in the suburbs were affected. These data reflect a dramatic change in the market—arms-length sales numbered fewer than one in five in the city and fewer than one in three in the suburbs. The median sale was now an affected sale and the median prices, shown in exhibit 4, clearly reflect that.

Prices in the affected market have been substantially lower since 2004; houses are selling at roughly 50 percent of the price in the nonaffected market. Because affected sales constitute a larger component of the market over time, the median price of all sales continues to drift closer and closer to the affected price. Through 2008, however, houses selling in the arms-length market had seen only modest declines. Compared with the data in exhibit 1, the data in exhibit 4 are much more illustrative of actual market conditions.

The distinction between the affected and arms-length market also plays out at the neighborhood level. Exhibits 5 and 6 show the sales counts and median prices for each segment in Cleveland's Ward 12, which includes Slavic Village, a neighborhood that received much attention for its role in the housing crisis, both nationally and in Cleveland. From the beginning of 2004 to the end of 2007, affected sales increased five fold. At the same time, arms-length sales, which were increasing from 2003 to 2005, began to slide, and they have yet to recover. Prices in the arms-length market

Exhibit 3

Percent of Single-Family Home Sales Identified as "Affected," Cuyahoga County, Ohio, by Quarter, 2004–2010

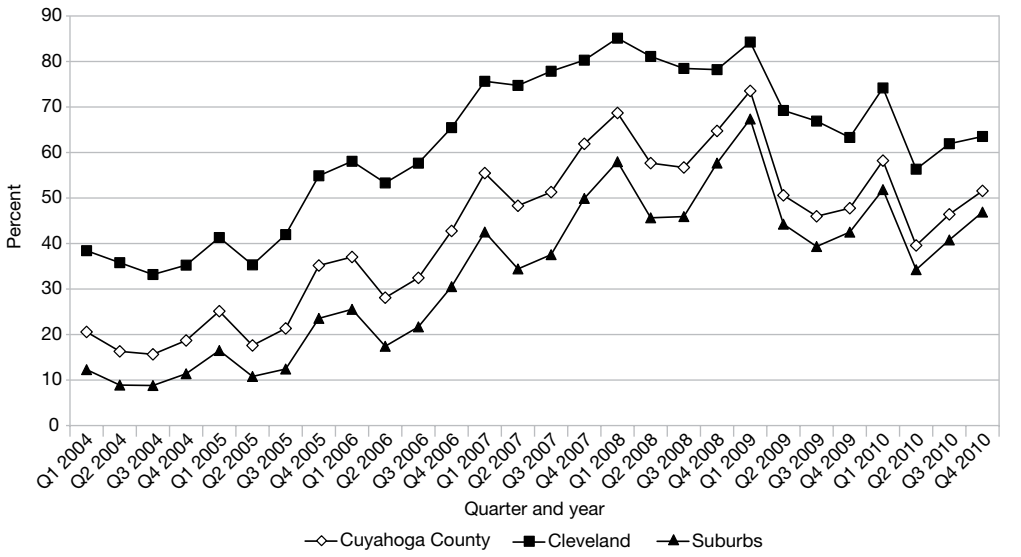


Exhibit 4

Median Single-Family Home Sales Price by Market Segment, Cuyahoga County, Ohio, by Quarter, 2004–2010

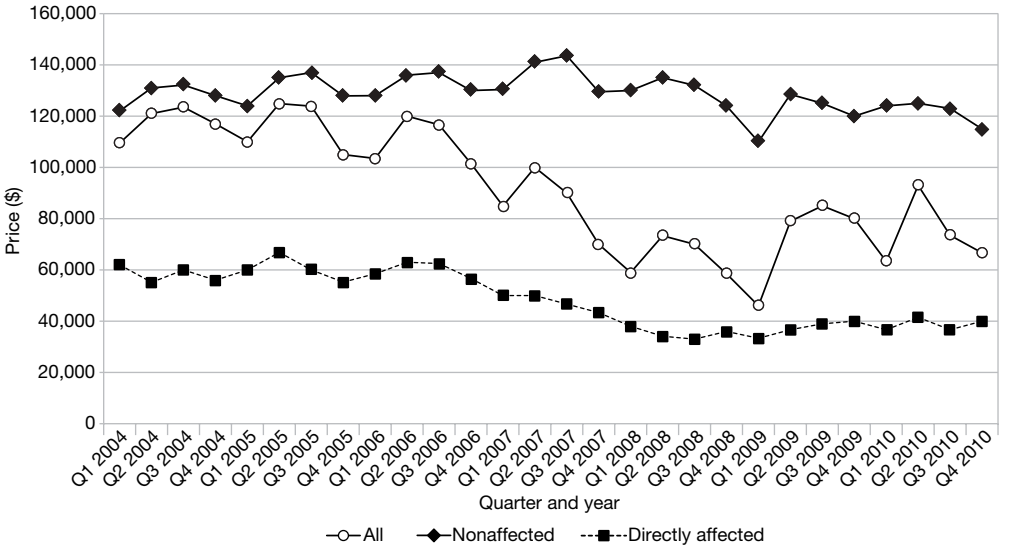


Exhibit 5

Single-Family Home Sales by Market Segment, Ward 12, Cleveland, Ohio, by Quarter, 2003–2010

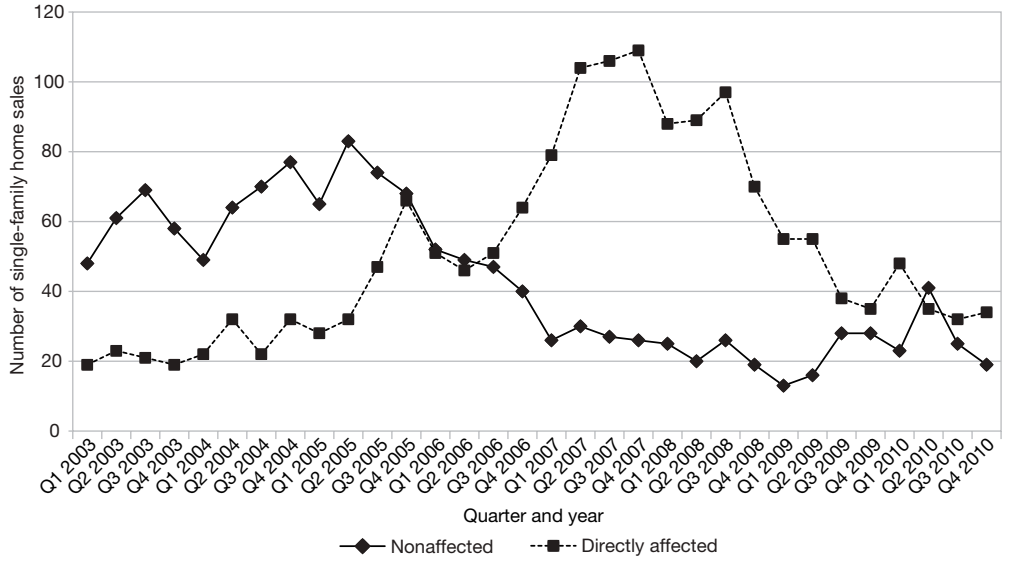
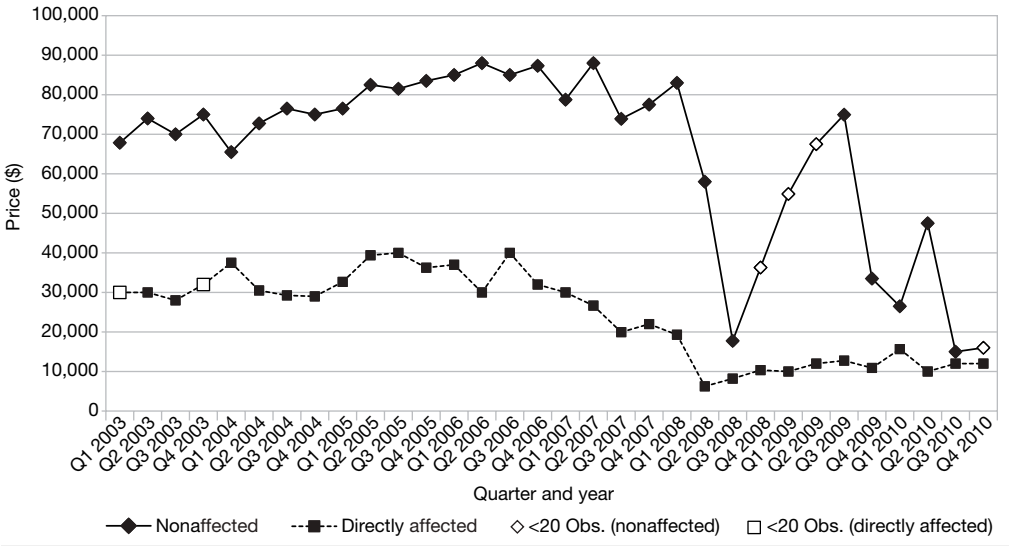


Exhibit 6

Single-Family Home Median Sales Prices, Ward 12, Cleveland, Ohio, by Quarter, 2003–2010



Obs. = observations.

remained strong (hovering around $80,000) until early 2008, when affected sales began flooding that market. Sales prices since then have been erratic (partly because of the sparse number of sales).

Using this sales dichotomy at the neighborhood level can identify locations where arms-length activity is still occurring, or, at the other end of the spectrum, identify when neighborhoods hit a turning point in which the market fails to distinguish between affected and nonaffected properties. In Ward 12, the arms-length market seems to have held on in volume until early 2005 and in sales price until 2008.

Exhibits 3 through 6 relied on combining sales data with foreclosure filing data, linking the two sets of data by parcel number. For each sale, we checked to see if there had been a sale in the last 2 years with a deed type that indicated a sheriff's sale. The analysis also cross-referenced the foreclosure filing data to determine if the sold property had a foreclosure filing in the previous 2 years.

Lesson #3: What Is Selling Now Is Not the Same as What Was Selling Previously

Tracking the median home sales price over time implicitly assumes measuring the same market from one year to the next, so that a 5-percent price increase represents a change in the value of the market, not a change in its composition. For example, if in one year all the houses that sold in a

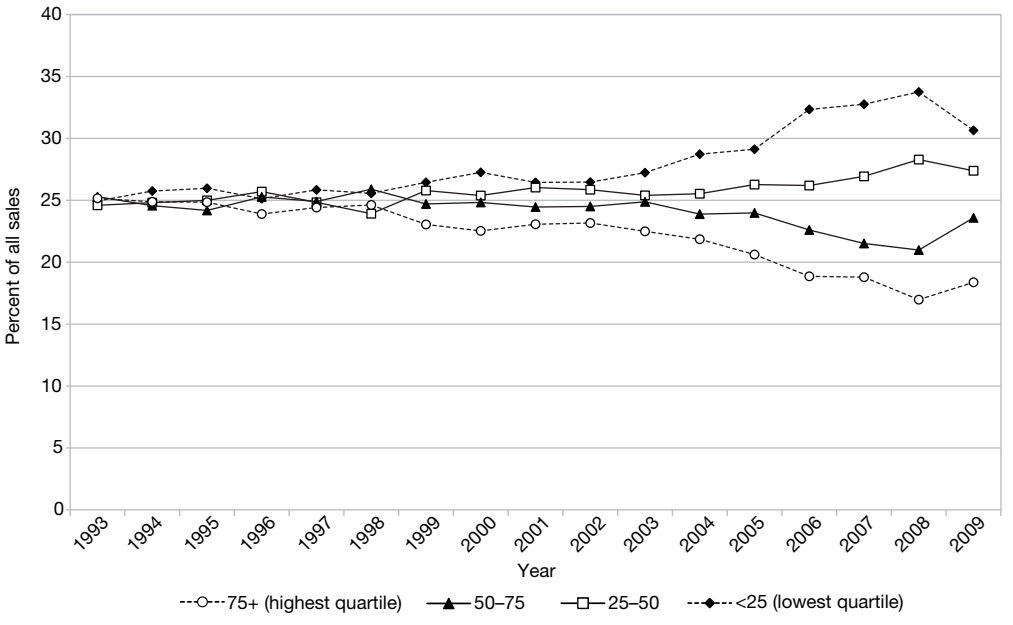
neighborhood were below average size and in the next year they were all above average size, one would anticipate a price increase from one year to the next simply because the larger houses were selling.

Exhibit 7 shows a change in value-composition occurring gradually since 1999, but accelerating since 2004, in the eastern suburbs of Cuyahoga County. For each year, the county auditor provides the estimated market value of each property (used for taxation purposes). Analysts at the Center then divide the entire housing stock into quartiles based on those values. For the transactions in each year, they run a frequency distribution on the value quartile and calculate the percentage of all houses that sold from each of the four value quartiles. If sales were balanced, they would expect 25 percent of all sales to come from each value quartile, as was roughly the case, for example, in 1993.

By 2008, however, the top 25 percent of all valued homes constituted only 17 percent of all sales. Similarly, one-third of all houses sold came from the lowest 25 percent value quartile. Thus, part of the downward pressure on median prices came from the fact that lower valued houses made up a larger portion of the overall market. This finding builds on the information displayed in exhibit 4. Not only are different market segments at work, but also larger numbers of lower valued houses are entering into each of those markets.

Exhibit 7

Single-Family Home Sales by Value Quartile, Eastern Suburbs, Cuyahoga County, Ohio, 1993–2009



Lesson #4: "Flipping" Went From a Red Flag to Worse

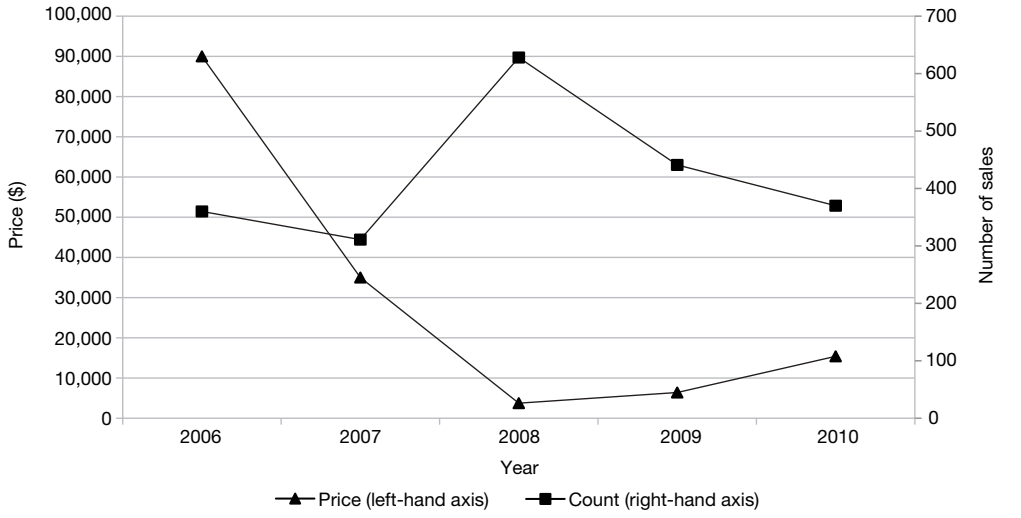
Before the housing crisis, the region's housing market experienced its fair share of "flipping," which is when a homebuyer purchases a house and then resells it very quickly (within 90 days, by the Center's definition) at a substantially higher price (25 percent higher, by the Center's definition). The analysts tracked and reported on these quick resales because the large price changes over such a short period of time were a concern. Under some flipping scams, very little, if any, renovation was done, but the house would be appraised and resold to an unsuspecting buyer for much more than its true value. This scenario was ripe for subsequent mortgage default. The Center created lists of those individuals involved with these transactions, and the analysts profiled the activities of those individual actors, over time, by price level and location.

As the local market worsened, these quick resale analyses unearthed a dramatic change in the quick resale market, as shown in exhibit 8. The median resale price was $90,000 in 2006, but it plummeted to less than $4,000 in 2008, and the volume of sales doubled from 2007. Although sales volume has since cooled, the 2010 median resale price is still less than one-fourth of its 2006 level.

Within a short period of time, the quick resale market focused on an entirely different type of structure. It went from what was likely questionable flipping of inhabitable housing to desperation sales—property-churning of dilapidated houses that are unlikely to be occupied again.

Exhibit 8

Quick Resale Price and Volume, Cleveland, Ohio, 2006–2010



Conclusions

Any single indicator presented likely generates several questions regarding why it was selected over another. Although analysts at the Urban Center engaged in much learning-by-doing, they were guided by a handful of data goals in their analyses. They used data that were available monthly and at the parcel level—primarily sales and foreclosure filings. Because the market changed quickly in our region, they wanted the most disaggregate, recent, and helpful data available.

The analysts kept it simple, both methodologically and graphically. They were producing these analyses for busy people who were not housing experts. The consumers of our research would not have all day to mull over its methodological nuances. They made maps, but often only to investigate findings produced via the indicators they have shared here. On the other hand, the analysts produced most of their work at a variety of aggregation levels. A Geographic Information System (GIS) is not necessary to conduct these analyses. Spreadsheet (such as Microsoft Excel) skills are necessary, however, and it is essential to have a way to join data on a common field (typically, a parcel number), which can be accomplished with SAS, SPSS, or Microsoft Access. This opens up the possibility of linking different data sets that contain information on a common object, such as a house, parcel, or neighborhood.

Many of the analysts' data decisions appear, and, in fact, were arbitrary. Their analyses were exploratory, and they had little past research to guide them. It is, of course, possible to test these data decisions for robustness and to experiment with different indicators over shorter or longer periods of time. Finally, but by no means trivially, the analysts cleaned the data that they used, making their analyses slightly more involved than what they have shown in this article. They did not delve into these details because they anticipate that other analysts will have different data issues than the Urban Center analysts had. The Urban Center will provide these details to interested analysts.

At a time when many thought the entire Cleveland market was "the ugly," the Center's research goal was to identify the good (nonaffected sales), the bad (affected sales and changed value composition), and the ugly (the balance between affected/nonaffected sales and the change in nature of the quick-resale market) in a way that was useful for local policymakers. The goal in this article is to relate that process and its results in a way that can be useful for other housing analysts in markets facing similar challenges.

Acknowledgments

Tom Bier and Ivan Maric provided useful input on the indicators reported in the article. Cuyahoga County's Don't Borrow Trouble foreclosure prevention program, the Cleveland City Council, and Cleveland's Department of Community Development provided funding for the research in which we developed these indicators.

Authors

Brian A. Mikelbank is an associate professor of urban studies at Cleveland State University.

Charlie Post is a research associate at the Urban Center at Cleveland State University.

Impact

A regulatory impact analysis must accompany every economically significant federal rule or regulation. The Office of Policy Development and Research performs this analysis for all U.S. Department of Housing and Urban Development rules. An impact analysis is a forecast of the annual benefits and costs accruing to all parties, including the taxpayers, from a given regulation. Modeling these benefits and costs involves use of past research findings, application of economic principles, empirical investigation, and professional judgment.

Regulatory Impact Analysis: Emergency Homeowners' Loan Program

Michael K. Hollar
U.S. Department of Housing and Urban Development

Program Summary

The Emergency Homeowners' Loan Program (EHLP), as enacted in the Dodd-Frank Wall Street Reform and Consumer Protection Act, allows the U.S. Department of Housing and Urban Development (HUD) to provide a maximum of $50,000 to homeowners who are 90 or more days delinquent on their mortgages due to a 15-percent or greater reduction in household income and face the threat of foreclosure. Reasons for the reduction of income are limited to involuntary unemployment, involuntary underemployment, and medical conditions. EHLP participants must come from households that earned no more than 120 percent of Area Median Income (AMI) before the decrease in income. EHLP provides assistance through a 5-year, no-interest loan, with loan repayment beginning after program assistance ends. Payments cease after 24 months or $50,000, whichever comes first, which allows up to 7 years from loan disbursement to full repayment. Finally, EHLP assistance is limited to homeowners in Puerto Rico and in the 32 states that are not assisted by the Department of the Treasury's Innovation Fund for Hardest Hit Housing Markets program.

Cost-Benefit Analysis

EHLP is intended to assist a segment of delinquent homeowners who face a high probability of foreclosure and have become delinquent because of a temporary loss of income. Assisted households are expected to recover financially within 24 months. The benefits of this program's rules include the avoidance of costs associated for (1) owners of foreclosed properties, (2) lenders holding mortgages

on foreclosed properties, (3) homeowners living near the foreclosed properties, and (4) local governments. Overall, the benefits of this rule are estimated to be between $928 million and $1.9 billion, offset by administration costs, namely participant selection ($87.3 million) and servicing the EHLP loans ($7.4 to $11.3 million), and up to $29.5 million of incremental costs of foreclosure to lenders caused by borrowers assisted by EHLP who subsequently default anyway. In addition, participants in this program receive a transfer ranging from $28.32 to $43.3 million, which is equal to the government's cost of borrowing the funds. Lenders also receive a transfer totaling $105 to $213 million, which includes costs related to the mortgage, such as interest payments, from the homeowner.

Demand for EHLP Loans

The amount of EHLP assistance for which a homeowner qualifies depends on the monthly mortgage payment and current income. Under program rules, homeowners are required to pay their monthly mortgage payments equaling up to 31 percent of their current monthly income. EHLP assistance can cover the remaining mortgage amount, for a period of up to 24 months. EHLP assistance can also be used to pay delinquent mortgage payments (principal and interest), taxes, insurance, and certain other related fees.

Data from canceled Home Affordable Modification Program (HAMP) loans[1] are used to estimate the number of homeowners who may need assistance from EHLP. The HAMP data[2] represent the most complete source of mortgage and income data for eligible households. The data used in this analysis are further limited to households that experienced the requisite fall in income and had incomes less than or equal to 120 percent of AMI before the fall. This filtered search yielded a total of 22,546 homeowners. After modification in HAMP, these homeowners had average monthly incomes of $3,329, 31 percent of which is $1,032. The average monthly housing expense for these households, including principal, interest, taxes, and insurance, was $1,519. HAMP, however, does not contain data on second mortgages. Assuming second liens are 20 percent of the first lien, the total monthly housing expense is $1,756, which qualifies a household for $724 in EHLP assistance. This amount represents the monthly need for homeowners seeking EHLP assistance and totals $17,370 for 24 months. To participate in EHLP, households must be at least 3 months delinquent in their mortgage payments. Assuming that participating homeowners are on average 5 months delinquent, $8,778 would be added to the total EHLP loan amount, for an overall total of $26,148. With a program limit of approximately $901 million available for loans to homeowners, after subtracting administrative costs, an average loan of $26,148 would assist up to 34,474 homeowners. This assessment calculates the value of benefits, costs, and transfers based on the assumption that between 22,546 and 34,474 homeowners will receive EHLP loans.

Benefits

The benefits of this program include the avoided costs associated with foreclosure. Foreclosures impose costs on four groups: (1) owners of foreclosed properties, (2) lenders holding mortgages on the foreclosed properties, (3) homeowners living near the foreclosed properties, and (4) local governments.

[1] For more information on HAMP, see http://www.makinghomeaffordable.gov/programs/lower-payments/Pages/hamp.aspx.

[2] HAMP data as of September 2010. The reported income and payment information used in this analysis is premodification because mortgage terms revert to premodification terms after the HAMP loan was canceled.

Owners of Foreclosed Properties

Foreclosure imposes a number of costs on owners, including moving costs, legal fees, and administrative charges. Using data collected through the Mortgage Foreclosure Prevention Program (MFPP) in Minneapolis and Saint Paul, Minnesota, Moreno (1995) estimated the total cost to homeowners related to foreclosure at $7,200 per household. This study was based on more than 800 low- and moderate-income distressed homeowners who were assisted by the MFPP. When adjusting for inflation, from 1995 to 2010, this estimate increases from $7,200 to $10,339 (43.6 percent).[3] In addition, families bear immeasurable costs of emotional stress and possibly higher costs for housing in the future because of poor credit ratings. Evidence of the high private cost of foreclosure is the level of negative equity that households are willing to bear before defaulting on a loan.

Lenders Holding Mortgages on the Foreclosed Properties

Foreclosure also imposes significant costs on mortgage lenders related to losses on loans, neglected property maintenance, appraisal fees, legal fees, lost revenue, insurance, marketing, and cleanup. Recent studies of lender loss rates present a range of estimates from 23 to 92 percent (UBS, 2008). This range reflects that loan loss severity depends on several factors, primarily loan amount and property value. The current analysis relies on Standard & Poor's (2008) estimate of 45 percent, which is derived using an average subprime loan size of $210,000. Using Standard & Poor's estimate of 45 percent and the average unpaid principal of the relevant households discussed previously ($152,052), the costs of foreclosure that lenders can avoid from EHLP is expected to be $68,423 per home.

The total prevented loss to the lender, however, cannot be counted as a social benefit. Much of this benefit is a transfer from the homeowner. If there had not been a foreclosure, the loss in equity would have been borne by the borrower and not the lender. The foreclosure affects the determination of whether the lender or the homeowner bears the burden of a specific cost but does not affect the aggregate cost.

Foreclosure-related transaction costs, which are borne by the lender and should be considered deadweight losses include legal fees, court fees, and broker fees. Commissions paid to agents and court and legal fees would not have been paid if the property had not been foreclosed upon and sold, and these payments do represent transaction costs that decrease social welfare. The deadweight loss from these transaction costs is approximated as the sum of 2 percent of the loan balance for legal fees and 6 percent of the housing price for brokers' fees. The total of deadweight loss avoided per loan is $10,063, or approximately 7 percent of the unpaid balance. The estimates from Cutts and Merrill (2008) imply that 49.1 percent of costs to the lender, excluding unpaid balance, represents a deadweight loss, which is similar to the 41.3-percent share developed in this analysis, using estimates from Standard & Poor's (2008).

The reduction in property value that results from being forced to sell a home because it is foreclosed upon (stress discount) could also be a source of deadweight loss. The stress discount should be counted, however, as a transfer rather than a cost. Although the seller will lose from a reduction

[3] Based on the Consumer Price Index from the first half of 1995 (151.5) to the first half of 2010 (217.535).

of value, another investor may gain from the opportunity to purchase at a lower price. Aside from the stress-discount loss of value, evidence indicates that properties lose value that they would not have lost if they had been traded in another circumstance. Frequently, before owners sell a home, they invest a great deal in the structure, at least in cosmetic aspects of the property. An owner who knows that he or she will default ceases to maintain and upgrade the property and may even actively disinvest. Cutts and Merrill (2008) explained that homeowners often destroy property before losing a home through foreclosure, including damage to walls and windows and flooding induced by clogging drains. The depreciation to the property is structural and real: the new owner must invest resources to restore the property to its preforeclosure state. Harding, Thomas, and Sirmans (2000) found evidence of this externality: borrowers with high loan-to-value (LTV) ratios spend, on average, 19 percent less on maintenance than those with lower LTV ratios. Knowledge of impending default would increase the overuse of housing. With an EHLP loan, the program could eliminate some of the loss associated with the depreciation of the structural value. We estimate this structural damage is equal to one-half of the stress discount on the property, which yields $14,445 (0.5 X 19 percent X $152,052).

Thus, two sources of real social benefits emanate from this program: preventing transaction costs that would not have been paid without the foreclosure and preventing the real structural loss surrounding a foreclosure. The social surplus per lender for a foreclosure avoided is $24,508 ($10,063 + $14,445), or 36 percent of the total gain to the lender.

Homeowners Living Near the Foreclosed Properties

Foreclosures resulting in long-term vacancies have a negative effect on the value of neighboring properties; they reduce the physical appearance of the neighborhood, attract crime, and depress the local economy. Immergluck and Smith (2006) estimated that the negative externality of a single foreclosure depresses the value of neighboring properties within one-eighth of a mile by 0.9 percent. These externalities arise when a foreclosed property is not maintained, which contributes to a lower quality neighborhood. The stigma of a foreclosed property can also cause neighborhood values to fall when other homeowners decrease their home sales prices or more homeowners choose to sell in anticipation of decreased neighborhood quality. Further, weak property appraisals based on comparables, which include the foreclosed property, affect the value of neighboring properties.

This analysis conservatively limits the negative effect of foreclosure to closeby homeowners; that is, homeowners whose properties are directly adjacent to and across from the foreclosed property. This limited group includes the two properties on each side of the foreclosed property and five properties across the street. Based on the median sales price of $171,100,[4] the aggregate effect of foreclosure on neighboring properties totals $13,859 (0.9 percent X $171,100 X 9).

Local Government

When a property forecloses, local governments face a variety of direct costs from additional administrative and legal burdens, policing services, and, in some cases, demolition of foreclosed

[4] The median price of existing homes sold, as reported by the NATIONAL ASSOCIATION OF REALTORS® (NAR) for October 2010, was $171,100.

properties. Apgar and Duda (2005) detailed the numerous costs imposed on local governments stemming from foreclosure. The Joint Tax Committee uses an estimate from Apgar and Duda of $19,227 as the average direct cost per foreclosure to local governments. This estimate represents an extreme case in which the structure is demolished by the local government. A more typical situation would be one in which the property is sold. Assuming that a property is vacant for a period of time, modest criminal activity is present, and the property is sold at auction, foreclosure costs local governments an average of $6,200. This amount represents only direct administrative and legal costs and specifically excludes property tax losses, unpaid property taxes not recovered, unpaid utility bills, unpaid water bills, and neglected property maintenance, which are not classified as deadweight losses.[5]

Total Benefits of Avoided Foreclosure

The sum of all costs avoided by the prevention of a foreclosure is $54,906 (exhibit 1). This benefit will not be realized, however, for every assisted household. Some households will default on their new EHLP loans and eventually lose their homes in foreclosure even with the EHLP assistance. Although the program is limited to homeowners who are expected to repay their mortgages, in some instances, foreclosure is unavoidable. Assuming a 15-percent program foreclosure rate,[6] the expected benefits per assisted household would be $46,670.

Exhibit 1

Expected Economic Benefits

Category of Benefit	Expected Benefits per Foreclosure Prevented ($)	Expected Benefits per EHLP Loan at Program Foreclosure Rate of 15% ($)	Expected Benefits per EHLP Loan at Program Foreclosure Rate of 25% ($)
Owners of foreclosed properties	10,339	8,788	7,754
Lenders holding mortgages on the foreclosed properties	24,508	20,832	18,381
Homeowners living near the foreclosed properties	13,859	11,780	10,394
Local government*	6,200	5,270	4,650
Average economic benefits	54,906	46,670	41,180
Aggregate for 22,546 households	1,237,910,676	1,052,224,075	928,433,007
Aggregate for 34,474 households	1,892,829,444	1,608,905,027	1,419,622,083

EHLP = Emergency Homeowners' Loan Program.

** Does not include lost or unpaid property taxes or utility bills or property maintenance costs.*

[5] See appendix A of Apgar and Duda (2005) for a complete explanation and listing of the administrative and legal costs included in this estimate.

[6] The assumption of 15 percent is approximately twice the national rate of homeowners seriously delinquent or in foreclosure. Because all the participants are distressed, a rate higher than the national rate is reasonable.

Costs

The costs of this rule include the administrative costs of implementing the program, including the outreach and processing of applications and loan servicing functions. In addition, lenders are expected to bear costs related to delayed foreclosure for those homeowners who receive EHLP loans but are still unable to avoid foreclosure.

Administration

The costs imposed by this program include the administrative costs of the program and the incremental costs associated with assisted households that experience foreclosure despite an EHLP loan. For the servicing functions of EHLP, HUD can choose a third-party organization to administer the program or can delegate this function to states with substantially similar programs already in place. Of the 32 states for which this program affects, 10 applied for self-administration. Administration under the third-party method will separate outreach efforts from loan servicing. Approved housing counselors will conduct outreach efforts that include marketing, counseling, and acceptance of EHLP applications and related documentation. The total costs for all of these services are reimbursed from the estimated amount of $87.281 million from the EHLP appropriation. All servicing functions will be managed by a third-party organization that has extensive loan servicing capacity. Annual mortgage loan servicing costs typically range from 0.25 to 0.5 percent of loan principal. HUD anticipates the cost of servicing EHLP loans to be on the low end, or about 0.25 percent. Using the assumption of 22,546 loans averaging $26,148, the loans will total $579.129 million, producing a servicing cost of $1,483,800 each year over a 5-year period or about $7.4 million. If all $901 million is loaned (minus the administrative costs), the 5-year servicing cost estimate would increase to $11.3 million.

Lender

Despite assistance through EHLP, some homeowners will be unable to remain current on their mortgages and will still experience foreclosure. These homeowners will have borne the costs of foreclosure regardless of whether they received EHLP assistance. There may be incremental costs of delaying foreclosure to lenders, however. For example, homeowners may let their property deteriorate while they receive the EHLP assistance, or, in some cases, neighborhood values will decline further during the delay in foreclosure caused by EHLP participation. Although successful screening of applicants should minimize this possibility, it is impossible to completely avoid some foreclosures within the program. Assuming that costs to lenders increase 5 percent because of additional property deterioration on program foreclosures, the incremental cost per foreclosed house would total $3,421 (exhibit 2).

Exhibit 2

Expected Economic Costs

Category of Cost	Expected Costs at Program Foreclosure Rate of 0% ($)	Expected Costs at Program Foreclosure Rate of 15% ($)	Expected Costs at Program Foreclosure Rate of 25% ($)
Lender (incremental costs of foreclosure)	3,421	3,421	3,421
Administration			
Outreach by approved counselors	87,281,000	87,281,000	87,281,000
Servicing			
For 22,546 households	7,369,160	7,369,160	7,369,160
For 34,474 households	11,267,827	11,267,827	11,267,827
Aggregate for 22,546 households	**94,650,160**	**106,219,640**	**113,932,627**
Aggregate for 34,474 households	**98,548,827**	**116,239,160**	**128,032,715**

Transfers

Finally, transfers will occur from two groups: (1) from the federal government to homeowners and (2) from homeowners to mortgage lenders. Homeowners receiving loans receive an interest rate subsidy from the federal government, which must borrow the funds loaned through the EHLP program. In addition, homeowners transfer interest payments to the mortgage lenders—payments that would not have been made in the event of foreclosure.

Homeowners

In addition to the costs and benefits produced by the program, homeowners will receive a transfer from the federal government equal to the federal government's cost of borrowing the funds. The federal government must borrow the funds with no interest payments received from the homeowners. At the current 10-year Treasury rate of 3.33 percent, over the 7-year period, the transfer would total $1,256 per loan.

Lenders

As explained previously, a portion of the total gain to the lender represents a benefit to society. For much of the lender's gain, the foreclosure affects the determination of whether the lender or homeowner bears the burden of a specific cost, but not the aggregate cost to society. As explained previously, most of the overall lender gain derived is not a benefit but is instead a transfer. Of the estimated gain, $43,915 is counted as a transfer from the homeowner to the original lender (exhibit 3). This portion, although a gain for the lender, does not result in a welfare gain for society because, for every dollar gained, there is a corresponding loss for another party. For example, interest on the mortgage is not paid from the homeowner to the lender in the event of foreclosure.

In sum, transfers total $45,171 per avoided foreclosure. At the expected 15-percent foreclosure rate, this average decreases to $38,584.

Exhibit 3

Expected Transfers

Recipient of Transfer	Expected Transfers per Foreclosure Prevented ($)	Expected Transfers per EHLP Loan at Program Foreclosure Rate of 15% ($)	Expected Transfers per EHLP Loan at Program Foreclosure Rate of 25% ($)
Homeowner	1,256	1,256	1,256
Lender	43,915	37,328	32,936
Average transfers	**45,171**	**38,584**	**34,192**
Aggregate for 22,546 households	**1,018,425,366**	**869,909,228**	**770,898,469**
Aggregate for 34,474 households	**1,557,225,054**	**1,330,136,198**	**1,178,743,627**

EHLP = Emergency Homeowners' Loan Program.

Summary of Effects

EHLP is expected to help between 22,546 and 34,474 distressed homeowners avoid foreclosure. Exhibit 4 summarizes the expected benefits, costs, and transfers from this program. Even at a high rate of foreclosures within the program, it is clear that benefits will greatly exceed costs. At a reasonable program foreclosure rate of 15 percent and the extension of 22,546 loans, benefits are estimated to total $1.052 billion, offset by costs of $106 million.

Exhibit 4

Expected Benefits, Costs, and Transfers at Various Participation Levels

Participation Level	Program Foreclosure Rate of 0% ($)	Program Foreclosure Rate of 15% ($)	Program Foreclosure Rate of 25% ($)
(1) 22,546 Loans			
Total Benefits	1,237,910,676	1,052,224,075	928,433,007
Total Costs	94,650,160	106,219,640	113,932,627
Net Benefits	1,143,260,516	946,004,435	814,500,380
Transfers	1,018,425,366	869,909,228	770,898,469
(2) 34,474 Loans			
Total Benefits	1,892,829,444	1,608,905,027	1,419,622,083
Total Costs	98,548,827	116,239,160	128,032,715
Net Benefits	1,794,280,617	1,492,665,867	1,291,589,368
Transfers	1,557,225,054	1,330,136,198	1,178,743,627

Note: The origination of approximately 1,900 loans creates total benefits that exactly equal total costs in the 15-percent program foreclosure rate scenario.

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