

Elizabeth A Duke: Addressing long-term vacant properties to support neighborhood stabilization

Speech by Ms Elizabeth A Duke, Member of the Board of Governors of the Federal Reserve System, at the Federal Reserve Bank of New York, New York, 5 October 2012.

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Good afternoon. I want to thank the Federal Reserve Bank of New York and the Rockefeller Institute for inviting me to participate in this important discussion of distressed residential real estate.

The boom and bust in housing that is a hallmark of the recent economic cycle has resulted in an unprecedented volume of foreclosures that has, in turn, left us with an extraordinary level of vacant and distressed properties. Even after the official end of the recession, home sales and house prices continued to decline for several years, and residential investment languished.¹ All of this has resulted in a slow recovery in housing, which is one of the primary reasons why our overall economic recovery has been so sluggish. In order to see the robust economic recovery we all want, we need to deal effectively with the large volume of vacant and distressed properties throughout the country.

Our housing crisis has many dimensions and will require a full spectrum of policy actions to restore health to the housing market, our economy, and most importantly, to neighborhoods and communities across the country. The Federal Reserve System has been active in studying various aspects of the crisis, bringing together community leaders and market participants to share experiences in forums such as this, and using data to identify areas of particular need. I have spoken in the past about credit availability, preventing foreclosures, converting foreclosed properties to rental properties, and strategies for neighborhood stabilization. Today, I would like to focus on the problems posed by an elevated level of vacant properties. I plan to draw on research conducted by Federal Reserve Board staff and would especially like to thank Raven Molloy, an economist in our macroeconomic analysis group, for her work in this area.

As I will discuss later in my remarks, the effective use of data is a common theme among success stories in neighborhood stabilization. In the hope that the census tract data referenced in this speech might be helpful to others working to address vacancy problems, I plan to post our data on the Federal Reserve website along with this speech.²

Level and distribution of vacant housing

Since the beginning of this year, there have been signs of improvement in aggregate housing market conditions nationally. Sales of new and existing homes have risen and home prices have turned upward. So far this year, house prices have risen sufficiently to move a noticeable number of underwater households – that is, those who owe more on their mortgages than the market value of their homes – from negative equity to positive equity. However, housing markets differ greatly both across regions and within metropolitan areas, and the positive signs in the aggregate data do not apply to all neighborhoods equally. For example, even within those metropolitan areas that have experienced rising average prices

¹ In the two years after the end of the most recent recession (Q2:2009), existing home sales rose only 4 percent, house prices fell by 4 percent, according to the CoreLogic price index, and residential investment averaged only 2–1/2 percent of gross domestic product (GDP) – half of the average GDP between 1949 and 2006.

² A Summary of Long-Term Vacant Typologies, Background on Analysis, and Data by Metropolitan Statistical Area (MSA) is available on the Federal Reserve Board website.

over the past year, one-fourth of ZIP codes saw a decrease in prices over the same period.³ Moreover, those ZIP codes with falling prices have also experienced rising vacancy rates more often than in other ZIP codes.⁴ These struggling high-vacancy areas provide evidence of the hard work that remains even as housing markets show signs of improvement. Although many of these areas share a high level of vacancy, they differ significantly in other characteristics: the concentration of vacancies, age of the housing stock, cause of the problem, and even the demographics of the residents. By looking more closely at the differences, we will gain a better understanding of these markets and of the policies or program solutions that will address their vacancy issues most effectively.

One measure that is frequently cited when describing recent improvements in the national housing market is the inventory of vacant homes for sale. This measure had fallen to 1.6 million units in the second quarter of 2012, substantially below its peak of about 2 million units in 2010 and the first half of 2011.⁵ However, many vacant homes are not on the market at all. These vacant units include properties that are in the foreclosure process, bank-owned properties that are not yet for sale, as well as properties for which the cause of vacancy has no connection to the foreclosure process. Indeed, the stock of non-seasonal homes held off market is nearly two and a half times as large as the for-sale vacant stock.⁶ But unlike the inventory of vacant homes for sale, this stock remains stubbornly elevated relative to pre-crisis numbers, and has not gone down at all over the past year.

Moreover, vacant units are not evenly distributed throughout the United States. Some neighborhoods suffer disproportionate numbers of them. Specifically, one-tenth of all census tracts account for nearly 40 percent of the entire vacant housing stock. By comparison, the overall housing market is only half as concentrated with only 20 percent of the aggregate housing stock found in the 10 percent of census tracts with the largest total number of housing units.⁷

Problems posed by vacant properties

Why focus on vacant homes? Vacant homes can be more than just an eye sore; they can have substantial negative impacts on the surrounding community, impacts that are felt most acutely by the neighbors and communities that must cope with the dangers and costs of vacant buildings. Since vacant properties tend to be concentrated in a relatively few number of neighborhoods, some communities are adversely affected much more than others.

Homes that have been vacant for a long time tend to fall into severe disrepair. Such physical blight can invite more property crime, as vacant houses are an appealing hide-out and target for criminals, and the absence of residents can mean fewer eyes in the neighborhood to look out for suspicious activity. In fact, counties that experience a large increase in the number of long-term vacant homes tend to see an increase in burglary in the following year. This correlation holds even after controlling for other county characteristics, such as changes in unemployment, changes in population, and changes in violent crime.⁸

³ Staff calculations based on house price indexes from CoreLogic.

⁴ Staff calculations based on house price indexes from CoreLogic and vacancy rates from the U.S. Postal Service (USPS).

⁵ Data from the Census Bureau's Housing Vacancy Survey.

⁶ Data from the Census Bureau's Housing Vacancy Survey. This measure of vacant homes held off market excludes properties that are held for occasional use or temporarily occupied by individuals with a usual residence elsewhere.

⁷ Staff calculations based on USPS vacancy data.

⁸ Staff calculations based on crime data from the Federal Bureau of Investigation's Uniform Crime Reports.

In turn, blight and crime make these neighborhoods less attractive to potential buyers, renters, and businesses. Calculations by Board staff indicate that ZIP codes with a larger increase in long-term vacancy experience smaller increases – or larger decreases – in house prices in the next year.⁹ Falling home prices can harm both neighboring homeowners as well as local municipalities that are dependent on property tax revenue.

Research conducted by the Federal Reserve Bank of Cleveland has shown that a home that is simply foreclosed, but not vacant, lowers neighboring property values by up to 3.9 percent. However, if a home is foreclosed, tax delinquent, and vacant, it can lower neighboring property values by nearly two and a half times that amount.¹⁰ Moreover, properties that have been vacant for a substantial period of time can impose even larger costs on the community, and all too often, the private market is not likely to solve the problem on its own. In such cases, government authorities and public resources may be required.

Of course, not all vacant properties pose a problem for the local community, as some homes become briefly vacant during the usual process of changes in ownership. But the longer a home stands vacant, the greater likelihood that poor maintenance and the associated problems that result can become serious issues for the surrounding community. Statistics from the American Housing Survey show that properties that have been vacant for longer than two years are much more likely to have severe problems, such as cracked floors or walls, broken or boarded up windows, and a roof or foundation in disrepair, that make these properties harder to rehabilitate and less appealing to prospective buyers.

Segmenting the inventory of long-term vacancies

Analysis by Federal Reserve Board staff has calculated the fraction of housing units in each census tract that has been vacant for at least two years – which I will refer to as “long-term” vacancy – and categorized tracts that appear in the top 10 percent of this distribution into three types.¹¹

The first category of high long-term vacancy census tract is an area where a large percentage of housing units were built post-2000, and that therefore can be thought of as “housing boom” tracts. These locations also have a higher median income, higher median house value, and a larger fraction of residents with at least a college degree than other high long-term vacancy census tracts. Examples of metropolitan areas with a large number of tracts in this category are Denver, Colorado; Orlando, Florida; Las Vegas, Nevada; and Phoenix, Arizona.

The second category of high long-term vacancy census tract has a large share of older housing stock built before 1960, low median income, a high poverty rate, a high unemployment rate, and a large share of residents with less than a high school degree. These tracts can be called “low demand” locations because these characteristics are frequently associated with areas suffering from persistent job loss and a decline in housing demand. Metropolitan areas with a large number of tracts in this category include Detroit, Michigan; Cleveland, Ohio; St. Louis, Missouri; and Baltimore, Maryland.

The third and final category of high long-term vacancy census tract has a low density of housing units per square mile, high shares of owner-occupied and single-family housing units, and a high fraction of white non-Hispanic residents. We can think of these

⁹ Staff calculations using USPS vacancy data and house values by ZIP code from Zillow.

¹⁰ Stephen Whitaker and Thomas J. Fitzpatrick IV (2011), “The Impact of Vacant, Tax-Delinquent and Foreclosed Property on Sales Prices of Neighboring Homes, (PDF)” Working Paper 11–23 (Cleveland: Federal Reserve Bank of Cleveland, October).

¹¹ The vacancy data are from the USPS and the tract characteristics are from the five-year sample of the 2010 American Community Survey.

neighborhoods as “traditional suburban” areas. Examples of metropolitan areas with a large number of tracts in this category are Charleston, West Virginia; Des Moines, Iowa; Peoria, Illinois; and Oklahoma City, Oklahoma – locations not often mentioned in national media coverage about the housing crisis.

Matching solutions to neighborhood characteristics

As I mentioned earlier, we should endeavor to achieve full recovery in all of the many diverse housing markets around the country. The private market will likely drive recovery in many locations and, in those locations, the appropriate role of government may be to monitor local activity and ensure that the actions of the private markets improve neighborhoods and provide opportunity for all families, regardless of income, race, ethnicity, or housing tenure.

However, some neighborhoods likely will not recover without the assistance of government, and in this time of scarce resources, it is critical that the public sector has the information and tools necessary to ensure that any assistance that is provided is effective and efficient. Doubtless there will be costs associated with solving these problems, but it is important to also consider the costs of doing nothing. For example, it costs local taxpayers to let vacant buildings decline, it costs money to tear them down, and it costs money to convert them to a better use. Ultimately, a policy of neglect will be just as – or even more – costly than finding and implementing constructive solutions to the vacancy issue. We must ask ourselves, can we create policies that fairly distribute those costs? What are the limitations? What innovations can create more effective, scalable solutions? With funding scarce, how can we identify solutions that will ultimately be most cost effective?

To begin to answer some of these questions, I return to the typology of vacant properties introduced earlier.

“Housing Boom” locations

The first type, “housing boom” areas, has relatively high median incomes and new housing stock. These characteristics are attractive to investors, and many investors are reportedly purchasing vacant homes and converting them to rental. Given the recent tightening of the rental market, such a strategy could be a win-win scenario for communities that need more affordable rental homes and suffer from an excess of single-family vacant units. In fact, in January, the Federal Reserve released a staff paper on housing issues¹² that went into some detail about the potential benefits of converting foreclosed properties to rental, and in April, the Board released a policy statement that outlines supervisory expectations for residential rental activities for certain banking organizations.¹³

Phoenix, Arizona, is a good example of an area with many census tracts that fit into the “housing boom” typology. Phoenix was one of the areas hit hard during the housing bust, with a peak-to-trough decline in prices of more than 50 percent.¹⁴ More recently, however, prices in Phoenix have rebounded with a double-digit increase over the 12 months ending in July.¹⁵ Reportedly, much of this demand is driven by investors who are converting vacant homes into rental properties. Direct statistical evidence on investor activity at the local level is not available. However, since investors tend to finance their purchases with cash or other non-mortgage financing, the level of cash purchases can provide an indicator of investor

¹² “The U.S. Housing Market: Current Conditions and Policy Considerations, (PDF)” white paper (Washington: Board of Governors of the Federal Reserve System, January 2012).

¹³ Federal Reserve Board Policy Statement on Rental of Residential Other Real Estate Owned Properties (PDF). April 5, 2012.

¹⁴ Data from CoreLogic.

¹⁵ Data from CoreLogic.

activity. In the past two years, the fraction of home purchases financed with cash in the Phoenix area was much higher than the national average.¹⁶ This is an example of the private market stepping in to purchase vacant units and in turn increasing housing values.

As encouraging as this trend may be, it is not a panacea. For example, it is possible that aggressive investor activity could crowd out potential homeowners, especially low- to moderate-income households. In addition, investors are not interested in all markets; therefore, there will still be some areas where private investment will not step in to curb the problems associated with vacant properties.

The problem of investors crowding out local homebuyers could be addressed through “first look” programs that provide a window, usually 15 days, during which time only prospective homebuyers and nonprofits may bid on a property. In Phoenix, non-profit organizations and local government officials used Neighborhood Stabilization Program (NSP) funding and enlisted local real estate professionals to match vacant homes with eligible homebuyers. These are important programs. Community leaders, banks, and real estate professionals should continue to collaborate to ensure that prospective homeowners are given a fair chance to bid on available properties.

However, most prospective homebuyers and local nonprofits cannot bid on a property if they cannot access mortgage credit. Results from the Federal Reserve’s Senior Loan Officer Opinion Survey suggest that banks are less willing to provide mortgage credit now than in 2006 to borrowers with lower credit scores or smaller down payments.¹⁷ We hear much the same story from community groups and housing counselors who report that low- and moderate- income and first-time homebuyers, especially, are finding it increasingly difficult to meet the requirements for a home purchase loan due to limited funds for a down payment or weaker credit scores. While prudent lending may warrant tighter underwriting standards relative to pre-crisis levels, it is also important to ensure that tight credit does not unnecessarily dampen the housing recovery and disproportionately affect creditworthy low-income and minority homebuyers. And without the participation of owner-occupants, it will be difficult for many housing markets to recover.

Like Phoenix, Oakland, California is also reportedly experiencing a significant amount of investor activity that may be crowding out purchases by prospective homebuyers and nonprofits. We hear complaints that many of these investors are not based in Oakland, causing residents to express concern about external ownership of their neighborhoods and the long-term implications of absentee landlords. In an attempt to address these concerns and provide more homeownership opportunities to low- and moderate-income Oakland residents, a national nonprofit, Enterprise Community Partners, is working with a private real estate fund to direct some of the private dollars seeking investment properties in Oakland. The nonprofit partnership is using a complex data-driven platform to identify targeted low- and moderate-income neighborhoods in the city, purchasing vacant properties, rehabilitating them through a local workforce development program, and converting them to rental. The ultimate goal is to ensure that the properties remain local neighborhood assets. To achieve this, the partnership is prioritizing rentals and sales to qualified local residents or nonprofits. Such an innovative strategy seeks to complement local government and investor activity so that residents can share in the benefits of a housing recovery.

¹⁶ The number of transactions financed with cash are calculated by subtracting the number of mortgage originations by ZIP code (based on data gathered under the Home Mortgage Disclosure Act) from the number of home sales by ZIP code reported by CoreLogic.

¹⁷ Federal Reserve Board. April 2012 Senior Loan Officer Opinion Survey on Bank Lending Practices (PDF). In response to a special set of questions on residential real estate lending practices, banks reported that they were less likely than in 2006, to varying degrees, to originate mortgages to any borrowers apart from those with the strongest credit profiles.

“Low Demand” locations

Not all markets are equally attractive to private investors, so some governments are developing programs to attract private capital to “low demand,” high-vacancy neighborhoods. The city of Baltimore, Maryland provides a good example of such a program. Baltimore is burdened with approximately 16,000 vacant and abandoned buildings, about a quarter of which are owned by the city. Much of this vacancy has been caused by population loss and suburban flight – Baltimore City has lost nearly one-third of its population over the last 50 years.¹⁸ However, not all parts of Baltimore have a significant number of vacant properties. In fact, only 5 percent of census tracts in the Baltimore metropolitan area have a long-term vacancy rate in the top decile of the national distribution.¹⁹ The city of Baltimore has recognized these micro-market distinctions and initiated an innovative data-driven program to identify areas with a high concentration of vacant properties and turn these properties into valuable assets.

This initiative, called “Vacants to Value,” uses data and targeted housing code enforcement to foster redevelopment in areas where there is modest private investment interest. Using a variety of real-time data sources, this program has developed market typologies down to the census block-group level so that it can accurately determine the needs of specific neighborhoods and apply targeted programs to best meet those needs. For example, the city is targeting approximately 700 vacant properties in weak market areas where large-scale investment – encompassing at least a city block – is necessary to catalyze private investment. In healthier neighborhoods, the city believes that increased code enforcement and homebuyer or developer incentives should be enough to reduce vacancy and stabilize neighborhoods. Lastly, in Baltimore’s hardest hit neighborhoods, the city is demolishing, holding, or maintaining properties that are unlikely to attract any private investment in the near future.²⁰

Unfortunately, in some cases, vacant homes are beyond repair and will never be habitable again. In these instances, demolition is often the best solution, and land banks can be a good way to hold the property until it can be converted to a better use. A land bank is a governmental or nongovernmental nonprofit entity established, at least in part, to assemble, temporarily manage, and dispose of vacant land for the purpose of stabilizing neighborhoods and encouraging re-use or redevelopment of urban property. Land banks have been around since the early 1970s, but the recent foreclosure crisis has stimulated the creation of several new land banking programs, including in New York State and Kansas City, Missouri. A key characteristic of the new generation of land banks is that they often include mechanisms to self-finance over time, including the ability to recapture a portion of the property taxes for a fixed period of time after the property is put back to productive use.

As encouraging as these new self-financing features are, land banks and municipalities are still struggling with the high costs of demolition. For example, in Cuyahoga County, home to Cleveland, Ohio, about 80 percent of the approximately 100 properties per month that the land bank acquires need demolition, but at \$10,000 in average costs per demolition, the Cuyahoga Land Bank is struggling to find the resources to fund this activity.²¹ The state of Ohio recently dedicated \$75 million of its direct payments from the Attorneys’ General (AG) National Mortgage Settlement to fund a new grant program for demolition of abandoned and

¹⁸ Ellen Janes and Sandra Davis (2011), “Vacants to Value: Baltimore’s Market-Based Approach to Vacant Property Redevelopment,” *Putting Data to Work: Data-Driven Approaches to Strengthening Neighborhoods* (Washington: Board of Governors of the Federal Reserve System, December).

¹⁹ Staff calculations based on USPS vacancy data.

²⁰ *Ibid* 18.

²¹ Tom Fitzpatrick. (2012). *Connecting Communities* [Webinar].

vacant properties statewide.²² This \$75 million still will not solve all of Ohio's demolition needs, but leveraging public and private funds like the AG settlement or developing new national sources of bond financing could help address this local problem.²³

“Traditional Suburban” locations

The last category of high-vacancy areas in the typology that I discussed earlier is “traditional suburban” neighborhoods. In contrast to the other two types of high-vacancy census tracts, these neighborhoods are more evenly spread across many metropolitan areas, illustrating that vacancy can be a problem in any community. Furthermore, ZIP codes in the “traditional suburban” tracts do not tend to have a higher share of property vacancies resulting from foreclosure than other ZIP codes, which demonstrates that some neighborhoods are struggling with long-term vacancy issues even though they did not experience large numbers of foreclosures. While the vacancies faced by these suburban areas might not have been caused by foreclosure problems, the costs to neighborhoods are every bit as real. Such areas represent additional opportunities to use the lessons of the recent crisis as local leaders strive to better understand the root cause of high vacancy levels and to target limited resources. Consider the situation faced by Oklahoma City.

Oklahoma City estimates that 8,000 urban properties have been vacant for more than three years, and that the number of vacancies is increasing.²⁴ The city's historically high housing vacancies mostly stem from cultural and demographic changes that have occurred over decades, as well as inadequate building code laws and enforcement. Interestingly, the area did not experience the housing boom and bust that occurred in much of the nation. Whereas national house prices rose by 89 percent between 2000 and 2006, prices in Oklahoma City rose by only 35 percent. In addition, house prices in Oklahoma City have been flat since 2006, a sharp contrast to the large drop in national home prices.

But even though the vacancy rates in Oklahoma City are not a direct result of the housing boom and bust, it may be that newer solutions developed for “housing boom” and “low demand” areas can be combined with traditional community development policy tools to help solve a problem that developed over decades. Indeed, city planners recently concluded that the city could not tackle neighborhood revitalization without addressing vacancies. Increasing costs for needed city services, reduced revenues, and barriers to growth resulting from deteriorating infrastructure all combined to lend urgency to these efforts. As has been the case in other cities, officials in Oklahoma City realized that gathering data was a necessary first step. Starting earlier this year, they embarked on an ambitious study to determine the total cost resulting from vacancies. The city will then use the findings from the study to support enactment of tougher code enforcement to recover lost revenue, including assessment of fines against owners who fail to maintain their properties. This combination of new measurements and old tools to develop solutions should serve as an example to many “traditional suburban” areas around the country that have experienced, and will continue to experience, vacancy issues.

²² Ohio Attorney General (2012). “Attorney General Launches Moving Ohio Forward Demolition Grant Program To Remove Blighted Residential Structures,” press release, April 13.

²³ For example, the “Restore Our Neighborhoods Act” (H.R. 4210), sponsored in 2012 by Representative Steven LaTourette (R-OH) would authorize creation of “Qualified Urban Demolition Bonds” to support demolition costs.

²⁴ Russell Claus, Director, Planning Department, city of Oklahoma City. Interview by Paul Wenske, Senior Community Development Advisor, Federal Reserve Bank of Kansas City. August 2012.

Conclusion

The potential fallout of high rates of vacancy – blight, crime, lowered home values, and decreased property tax revenue – is the same for every neighborhood and community. But there is no one-size-fits-all solution to the vacancy problem. I've used some examples of communities around the country that are facing high vacancy rates in order to illustrate their different characteristics and the different origins of their vacancy problems. Taking account of such differences will be important in crafting solutions to the problems caused by those vacancies. Hopefully, these examples and other ideas that have been shared throughout this conference will inspire new and creative solutions to the difficult issues faced by communities. Certainly, different housing markets will recover in different ways and at different paces. In some areas, the private market will lead the way, while in others, government will have to use precious resources wisely to catalyze recovery.

The examples I've discussed also illustrate the value of using data to understand vacancy issues, to determine which neighborhoods are experiencing which challenges, and to design appropriate policy solutions. Solving the problems of long-term vacancies will require the best efforts of public, private, and non-profit leaders locally and across the country. I can assure you the Federal Reserve System will continue to support recovery through the use of all its policy tools and research capacity.

Thank you.

Appendix

Summary of Long-Term Vacant Typologies

Below is a description of the three typologies of census tracts with high long-term vacancy rates that are described in Governor Elizabeth Duke’s October 5 speech entitled “Addressing Long-Term Vacant Properties to Support Neighborhood Stabilization” and demonstrated by the attached data. These tracts are defined as tracts in the top 10 percent of the national distribution of long-term vacancy rates, where the long-term vacancy rate is the fraction of residential addresses that have been vacant for longer than two years. More details on the methodology can be found in the Background on Analysis section.

	"Housing Boom"	"Low Demand"	"Traditional Suburban"
Defining Characteristics	<ul style="list-style-type: none"> Large fraction of housing units built post-2000 High median income* High median house value* Large fraction of residents with at least a college degree Large fraction of Asian residents* 	<ul style="list-style-type: none"> Large fraction of older housing stock (built before 1949) Low median income High poverty rate High unemployment rate Large fraction of residents with less than a high school degree Large fraction of black, non-Hispanic residents 	<ul style="list-style-type: none"> Low density of housing units per square mile High fractions of owner-occupied and single-family housing High fraction of white, non-Hispanic residents
Examples of metropolitan areas with a large number of tracts in this category	<ul style="list-style-type: none"> Denver, CO Portland, OR Orlando, FL Las Vegas, NV Phoenix, AZ 	<ul style="list-style-type: none"> Detroit, MI Cleveland, OH Baltimore, MD Pittsburgh, PA St. Louis, MO 	<ul style="list-style-type: none"> Charleston, WV Oklahoma City, OK Des Moines, IA Peoria, IL Tulsa, OK
Number and percentage of all high-vacancy census tracts in this category	<ul style="list-style-type: none"> 512 tracts nationally 26 percent of all high-vacancy tracts 	<ul style="list-style-type: none"> 726 tracts nationally 37 percent of all high-vacancy tracts 	<ul style="list-style-type: none"> 700 tracts nationally 36 percent of all high-vacancy tracts

Note: Most of the defining characteristics are true both in comparison to all census tracts in the U.S. and to other high long-term vacancy tracts.

* Characteristics with an asterisk are only true when compared to other high long-term vacancy tracts. See Table 2 in the Background on Analysis section for details.

Background on Analysis

The analysis of long-term vacancy by neighborhood is based on data collected by the U.S. Postal Service (USPS). The Department of Housing and Urban Development (HUD) processes the data and makes statistics by census tract available to researchers at government and non-profit institutions. Details can be found at www.huduser.org/portal/datasets/usps.html.

The first step is to identify census tracts with a large fraction of long-term vacant housing units. Because an address could appear to be vacant if it is seasonally occupied, we drop census tracts with a share of seasonal housing units greater than 10 percent (data on seasonal housing units by census tract are from the 2006–10 American Community Survey). Then, we calculate the fraction of all residential addresses in each tract that have been vacant for two years or more; we call this the “long-term vacancy rate.”¹ We identify tracts in the top decile of the national distribution as those with a high long-term vacancy rate.

¹ We also drop all census tracts in Tennessee because the data on length of vacancy for that state are not accurate.

To create a typology of these high-vacancy tracts, we merge in data on tract characteristics from the 2006–10 American Community Survey and estimate a factor model. Factor analysis is designed to combine a set of variables in a way that summarizes common elements. The analysis identifies three factors that account for a meaningful fraction of the variance of the characteristics in the model.² Table 1 reports the census tract characteristics used in the model and weights that each factor places on each characteristic. Using these weights, we predict the value of each factor for each census tract. Then, we assign each tract to a category based on its largest predicted factor. Table 2 reports the average value of each characteristic for tracts that are assigned to each of the three types.

Table 1
Factor Weights

	Factor 1 = "Housing Boom"	Factor 2 = "Low Demand"	Factor 3 = "Traditional Suburb"
Distance from MSA center	0.148	-0.143	0.106
Housing units per square mile	0.148	0.299	-0.499
Fraction owner-occupied	0.106	-0.457	0.734
Fraction single-family	0.019	-0.102	0.780
Fraction built 2005 or later	0.262	-0.014	0.068
Fraction built 2000 to 2004	0.252	-0.113	0.100
Fraction built 1950 to 1969	-0.101	0.164	-0.029
Fraction built 1949 or earlier	-0.178	0.326	-0.106
Median household income	0.698	-0.377	0.438
Median house value	0.838	-0.106	-0.034
Poverty rate	-0.365	0.632	-0.424
Unemployment rate	-0.267	0.676	-0.178
Fraction with less than a high-school degree	-0.490	0.381	-0.212
Fraction with a college degree or more	0.783	-0.222	-0.048
Fraction black, non-Hispanic	-0.240	0.764	-0.221
Fraction Hispanic	-0.067	-0.171	-0.151
Fraction Asian	0.394	-0.050	-0.256
Eigenvalue	5.45	1.78	1.19

Note: The table shows the factor loadings from a factor analysis that includes all census tracts with a long-term vacancy rate in the top decile of the national distribution. The long-term vacancy rate is the fraction of residential addresses that have been vacant for at least two years. All characteristics except distance are from the 2006-10 American Community Survey. Distance is calculated using the Pythagorean theorem where the inputs are the latitude and longitude of the centroid of the census tract and the latitude and longitude of the centroid of the metropolitan area.

² Specifically, each of these factors has an eigenvalue greater than one.

Table 2
Average Value of Tract Characteristics by Typology
(2011)

	Factor 1 = "Housing Boom"	Factor 2 = "Low Demand"	Factor 3 = "Traditional Suburb"	Other Tracts (long-term vacancy rate not high)
Distance from MSA center	0.32	0.21	0.28	0.28
Housing units per square mile	1,782	2,421	149	2,671
Fraction owner-occupied	0.60	0.44	0.80	0.64
Fraction single-family	0.60	0.61	0.77	0.68
Fraction built 2005 or later	0.07	0.03	0.04	0.03
Fraction built 2000 to 2004	0.11	0.04	0.07	0.06
Fraction built 1950 to 1969	0.19	0.25	0.19	0.28
Fraction built 1949 or earlier	0.18	0.46	0.26	0.26
Median household income	\$56,975	\$23,741	\$46,525	\$56,143
Median house value	\$251,477	\$77,711	\$109,684	\$245,675
Poverty rate	14.9	39.4	13.9	14.9
Unemployment rate	7.5	21.0	7.6	8.5
Fraction with less than a high-school degree	0.12	0.29	0.18	0.16
Fraction with a college degree or more	0.33	0.09	0.15	0.28
Fraction black, non-Hispanic	0.10	0.73	0.06	0.14
Fraction Hispanic	0.15	0.08	0.11	0.16
Fraction Asian	0.05	0.01	0.01	0.05
Number of tracts	565	792	1112	44318

Note: Tracts in the highest decile of long-term vacancy are assigned to the category (*i.e.*, factor 1, factor 2, or factor 3) for which the predicted factor is highest. The long-term vacancy rate is the fraction of residential addresses that have been vacant for at least two years. All characteristics except distance are from the 2006-10 American Community Survey. Distance is calculated using the Pythagorean theorem where the inputs are the latitude and longitude of the centroid of the census tract and the latitude and longitude of the centroid of the metropolitan area.