JOINT CENTER FOR HOUSING STUDIES OF HARVARD UNIVERSITY

IMPROVING AMERICA'S HOUSING 2019

Joint Center for Housing Studies of Harvard University

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IMPROVING AMERICA'S HOUSING 2019

Executive Summary

With new construction still slow to recover from historic lows, almost 80 percent of the nation's 137 million homes are now at least 20 years old and 40 percent are at least 50 years old. The aging of the US housing stock has been a boon to the home improvement industry, helping to lift the remodeling market to nearly $425 billion in 2017, according to the latest estimates from the Joint Center for Housing Studies **(Figure 1).**

Indeed, in the years since the Great Recession, spending on improvements and routine maintenance to both owner-occupied and rental properties has not only increased the value of the existing stock but also contributed a dominant share of residential investment. In addition, the tens of millions of projects undertaken annually—from roof and window replacements to major kitchen and bath remodels—generated 2.2 percent of national economic activity in 2017.

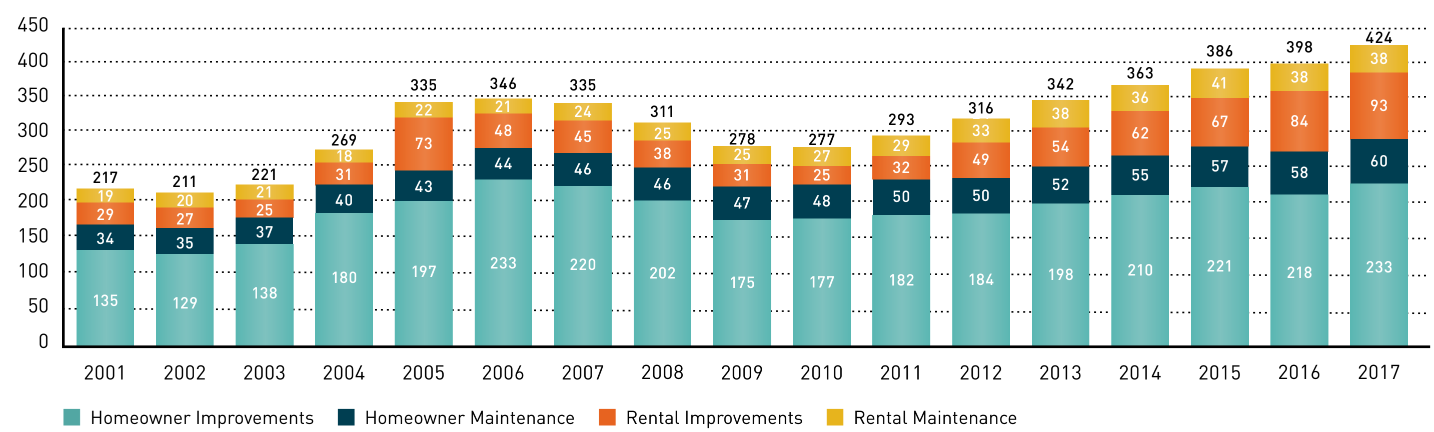
Some of the recent strength of the remodeling market reflects a significant increase in spending by rental property owners. The surge in rental demand following the housing crisis prompted owners to invest in substantial upgrades to their units. Homeowners also had some catching up to do on maintenance and replacements deferred during the downturn, particularly on properties converted to rentals or left vacant for extended periods.

The steady uptick in house prices in many markets has also helped to lift improvement and repair spending. Rising home prices mean growing equity, providing owners both the incentive and the means to undertake more and larger

FIGURE 1

The Home Remodeling Market Has Grown More than 50 Percent Since the Recession Ended

Billions of Dollars



Source: JCHS analysis of US Department of Housing and Urban Development (HUD), American Housing Surveys and Rental Housing Finance Surveys; US Department of Commerce, Retail Sales of Building Materials; US Census Bureau, Surveys of Residential Alterations and Repairs (C-50); and National Apartment Association (NAA), Surveys of Operating Income & Expenses.

projects. The aging population is another factor, given that households age 55 and over not only have higher homeownership rates, but many also have the resources to pay for renovations and replacements.

Looking ahead, several market forces may temper the growth in improvement spending. In the short term, investments in homes previously lost to foreclosure, held off market, or converted to rentals during the housing crisis are likely to slow. Over the longer term, the decline in homeowner mobility is a drag on the remodeling market because households that move typically spend more on improvements during their first few years of occupancy. Lower household mobility is in part the result of an aging population, but rising house prices have also made many markets largely unaffordable, thus preventing potential owners from buying homes and current owners from trading up.

Offsetting these challenges, however, are a growing list of opportunities. Over the next decade, the strong preference of older homeowners to age in place and the increasing difficulty of building affordable housing will keep the damper on new home construction. The remodeling industry will therefore continue to have a major role to play in meeting the nation's housing needs.

In particular, as members of the baby-boom generation age into their 70s and 80s, investments in home modifications to improve accessibility are expected to soar. A likely upturn in homeownership among younger households will also support growth in remodeling spending as many of these new owners modify older homes to meet their needs and preferences. In addition, the rising incidence and severity of natural disasters have created a growing market for repair and renovation of housing damaged in these events. Finally, expanding owners' ability to pay for projects over time—whether through home equity loans or lines of credit, cash-out refinances, or contractor-arranged financing—would not only help to update the nation's aging housing stock, but also generate considerable growth in the home improvement market.

Housing Market Dynamics

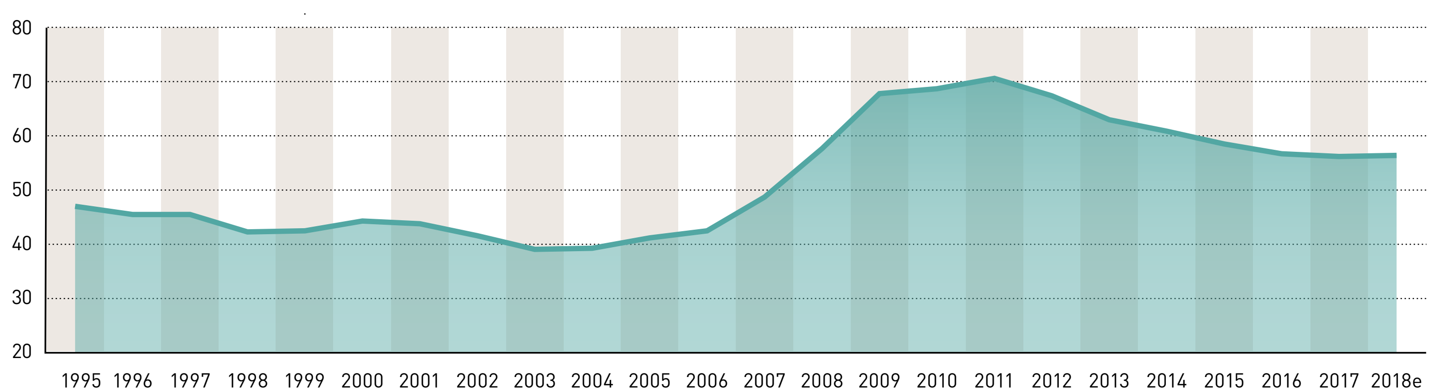
Spending on improvements and repairs to the US housing stock continued on an upward trend in 2017, setting a new high of $424 billion. This represents a 10 percent increase from 2015 and more than 50 percent gain from the low in 2010, according to benchmark estimates by the Joint Center for Housing Studies.

Although historically accounting for about a quarter of market spending, improvements and repairs by rental property owners have driven an unusually large share of growth during this recovery. When the Great Recession hit, a surge in rental housing demand sparked a boom in multifamily construction. But with construction costs rising faster than household incomes, the rents on these new units were out of reach for many. Owners of existing rental properties responded to the growing demand for updated but more affordable units by investing in significant upgrades to their

FIGURE 2

Remodeling Spending Continues to Contribute a Dominant Share of Residential Investment

Improvement and Repair Expenditures as a Share of Residential Investment (Percent)



Note: Total residential investment includes the value of construction put in place for new single-family homes, multifamily homes, and improvements and repairs to owner-occupied and rental units.

Source: JCHS analysis of HUD, American Housing Surveys and Rental Housing Finance Surveys; US Census Bureau, Construction Spending Put in Place (C-30) and C-50 series; NAA, Surveys of Operating Income & Expenses; and JCHS, Leading Indicator of Remodeling Activity.

FIGURE 3

Owners Have Invested Heavily in Improvements to Units Previously Rented or Vacant

Rental/Vacant Units Converted to Owner-Occupied	2010–2011	2012–2013	2016–2017
Number of Units (Millions)	5.0	5.7	6.6
Share of Owner-Occupied Units (Percent)	6.6	7.6	8.6
Average Per Owner Improvement Spending (Dollars)	6,500	6,900	7,500
Total Improvement Expenditure (Billions of dollars)	33.0	39.6	50.0
Share of Total Improvement Expenditure (Percent)	9.2	10.4	11.1

Notes: Number of units converted from rental or vacant status to owner occupancy is calculated from linked surveys for 2009 and 2011, 2011 and 2013, and 2015 and 2017. Share of these units in the owner-occupied stock is based on conversions in the two years preceding 2011, 2013, and 2017. Number of units, average spending, and total expenditure are two-year sums.

Source: JCHS analysis of HUD, 2009–2017 American Housing Surveys.

buildings, lifting the rental share of residential improvement and repair spending from about 20 percent in 2007 to over 30 percent in 2016 and 2017.

Spending on the owner-occupied stock also revived after several years of stagnation. The foreclosure crisis had left many homes vacant for extended periods and led to widespread conversion of previously owner-occupied housing to rentals. As homeownership demand has started to recover, millions of these units have been converted back to owner occupancy and their owners have made substantial investments in improving their condition.

With the modest recovery in homebuilding, the improvement and repair share of residential investment has held above 55 percent **(Figure 2).** Indeed, starts of single-family housing averaged just 610,000 units annually from 2008 to 2017, the weakest decade of production in the postwar period. Given the challenges of building affordable homes in many markets, the remodeling share of residential spending will likely remain well above the historical average.

CHANGES IN THE OWNER-OCCUPIED STOCK

The number of housing units switching from either rental or vacant status to owner occupancy jumped from 5.0 million in 2010 and 2011 to more than 6.6 million in 2016 and 2017, according to Joint Center analysis of the American Housing Surveys. With construction of new housing lagging behind growth in homeownership demand, these converted units make up a growing share of the owner-occupied stock **(Figure 3).**

More than 70 percent of the units converted to owner-occupancy in 2016 and 2017 are detached single-family homes. Nearly a quarter of these homes—some 1.6 million units—are concentrated in the South Atlantic region of the country. Another 1.8 million are located in Pacific coast states and in the Great Lakes region. Just under half of converted units nationally had been renter occupied in 2015 and an equal share vacant, with the balance categorized as "usual residence elsewhere"—typically second homes or vacation properties. These recent additions to the owner-occupied stock far outnumber the 1.5 million new single-family homes completed in 2016–2017.

These changes have given a significant lift to improvement and repair spending. Total investment by owners of newly converted homes increased from $33 billion in 2010–2011 to $50 billion in 2016–2017, while average per owner spending over these two-year periods rose from $6,500 to $7,500. More than a third of spending on converted homes in 2016–2017 was for kitchen and bath remodels and room additions, compared with a quarter of spending on homes that had remained owner occupied during this period. Notably, per owner spending on homes that were previously vacant ($10,400) was more than double that on units converted from rentals ($4,500). By comparison, home improvement spending on units that remained owner-occupied throughout this period averaged $5,500.

Of the 15 most populous metros tracked by the American Housing Survey in 2015 and 2017, the markets where owners of previously rented or vacant homes spent the most on improvements were generally high-priced coastal areas with supply constraints. These markets include Boston, Chicago, Los Angeles, San Francisco, Seattle, and Washington, DC. On average, owner occupants in these metros spent $11,000 or more on upgrades to their recently converted units—at least 50 percent more than the national average.

THE INCENTIVE OF RISING HOUSE PRICES

After falling about 30 percent during the housing crash, national house prices have steadily climbed since 2011. Prices now exceed their pre-recession peak on a nominal basis, although they still lag below their previous high once inflation is factored in. Rising house prices are good news for the remodeling market in that they are associated with higher home improvement spending. Knowing that their homes are increasing in value provides owners an incentive to invest in their properties. In addition, rising house prices boost the equity that owners have in their homes, providing a ready source of funds if they want to finance their projects.

The relationship between rising house prices and home improvement spending is clear at the metropolitan area level. In metros where house price appreciation has been strong over the past decade—areas like Boston, Dallas, San Antonio, San Jose, San Francisco, and Seattle—owners have typically spent substantially more on home improvements than owners in metros where prices have not yet fully recovered, such as in Las Vegas, Miami, Phoenix, and Riverside **(Figure 4).** But as house prices rebound in markets decimated by the crash, home improvement activity in these metros is likely to pick up as well.

HOUSEHOLD MOBILITY & HOMEOWNERSHIP AFFORDABILITY

The national mobility rate—the share of the population that changes residences each year—has fallen by almost half over the past four decades. This decline is a concern for the home remodeling industry because homeowners that relocate typically spend 25–30 percent more on remodeling projects in the first few years after moving than those who do not relocate, even after controlling for differences in homeowner age and household income.

Of the many reasons for the slowdown in household mobility, the aging of the population is perhaps foremost given that older households tend to move much less often than younger ones. The long-term decline in average household size has also reduced the need to move to accommodate growing families. In addition, advances in technology have made telecommuting a feasible alternative to relocating for many households.

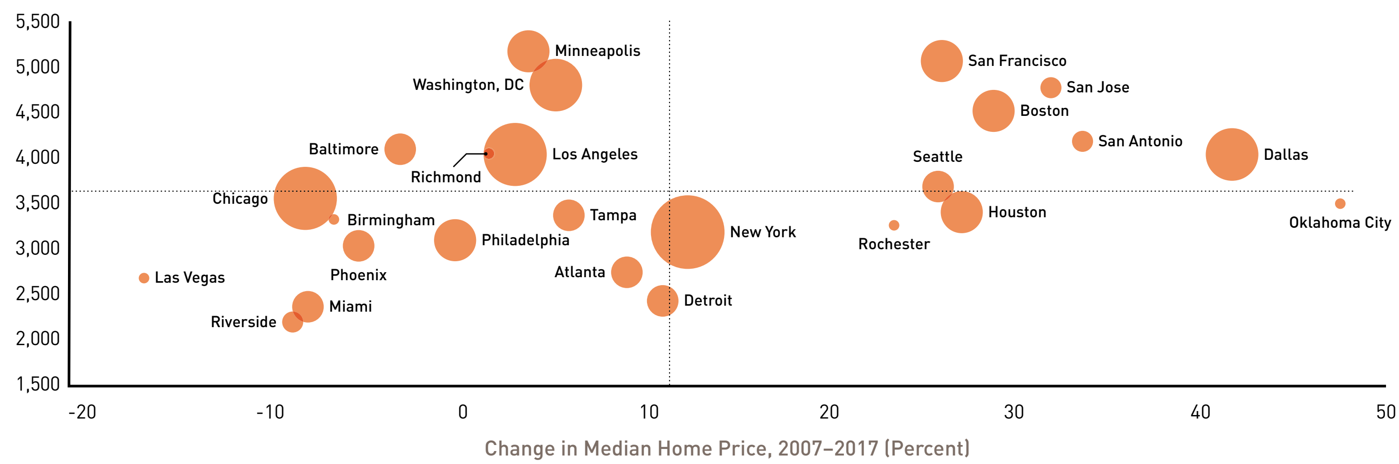
Finally, recent economic and housing market conditions have depressed homeownership rates among younger households. Whether because of low incomes and savings, high levels of student debt, the rising cost of housing, or concerns about the riskiness of the investment, many potential first-time buyers have yet to own homes. As a result, homeowners under age 35 have accounted for only 8–9 percent of home improvement spending annually since 2012, about 5 percentage points less than their average share over the 1995–2011 period.

In areas of the country where homeownership is relatively affordable, however, younger households do contribute significantly more to local improvement spending **(Figure 5).** In most Midwestern and South Central metros with average home values under four times average household incomes,

FIGURE 4

Owners Generally Spend More on Home Improvements in Markets Where House Price Appreciation Is Strong

Average Per Owner Home Improvement Spending, 2017 (Dollars)

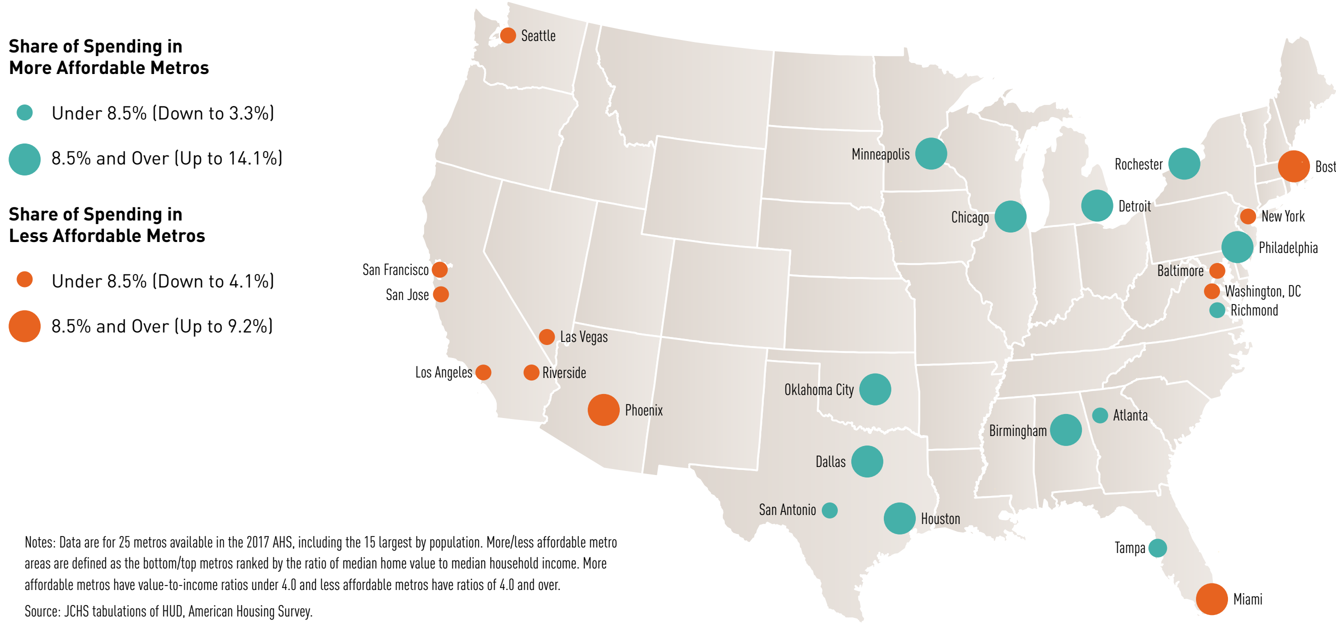


Notes: Data are for 25 metros available in the 2017 AHS, including the 15 largest by population. Size of dot corresponds to aggregate home improvement spending within each metro. Home prices are annual averages of the median sales prices of existing single-family homes. The weighted average of per owner home improvement spending is $3,600, and the simple average change in median home price is 11%.
Source: JCHS analysis of HUD, 2017 American Housing Survey; CoreLogic; and Moody's Analytics.

FIGURE 5

Younger Owners Account for a Higher Share of Market Spending in More Affordable Metros

Home Improvement Expenditures by Owners Under Age 35 in 2017



Notes: Data are for 25 metros available in the 2017 AHS, including the 15 largest by population. More/less affordable metro areas are defined as the bottom/top metros ranked by the ratio of median home value to median household income. More affordable metros have value-to-income ratios under 4.0 and less affordable metros have ratios of 4.0 and over.

Source: JCHS tabulations of HUD, American Housing Survey.

the share of improvement spending by owners under age 35 ranged from 9 to 14 percent in 2017. In most high-cost metros on the East and West Coasts, though, young homeowners accounted for only a 4–7 percent share of improvement spending. This finding suggests that younger households would likely play a larger role in the remodeling market if homeownership affordability were less of an obstacle.

THE OUTLOOK

Over the past decade, spending on improvements and repairs to the nation's housing stock has accounted for a majority of residential investment. This period coincides with historically low levels of new construction, particularly of single-family homes, and the consequent aging of the national stock. This trend is unlikely to change. As existing homes account for an ever-larger share of the stock, tens of millions of homeowners will modify and update their units each year in terms of size, layout, features, and accessibility in order to meet their changing needs and preferences.

The steady recovery in national house prices since 2011 has helped to generate healthy increases in home improvement spending. In markets that are still depressed, home improvement activity is set to rebound once house prices fully recover. However, there are limits to how much rising prices can bolster the remodeling market. As it is, house prices have continued to outpace household income growth for several years. When coupled with higher mortgage interest rates, higher house prices will make homeownership increasingly unaffordable especially to many younger households—the demographic most critical to long-term growth of the home remodeling market.

Demographic Drivers

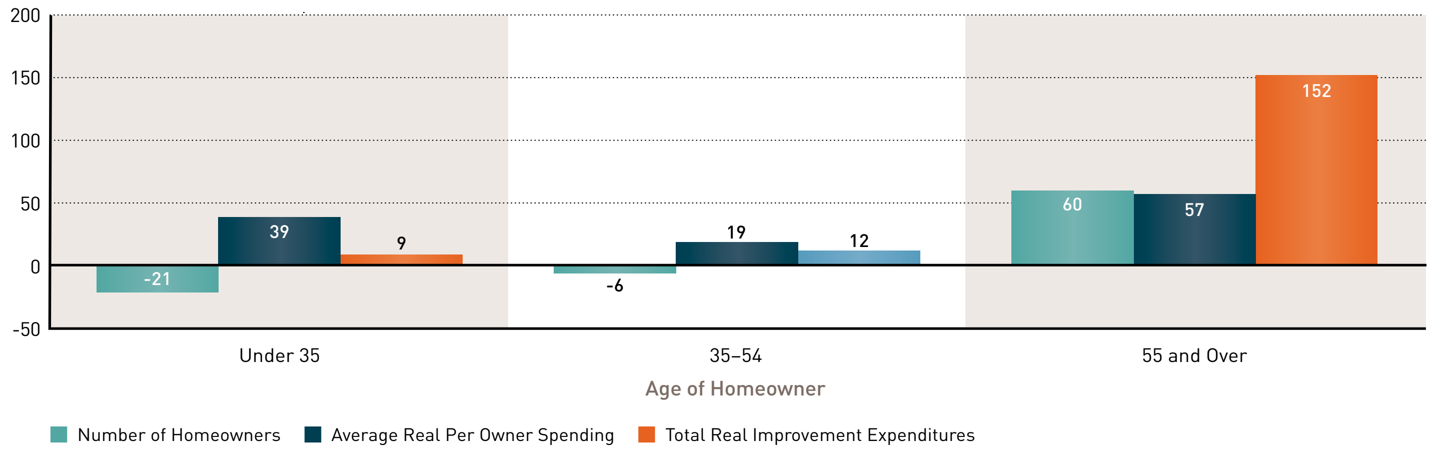
Homeowners age 55 and over have dominated the home remodeling market for nearly a decade, overtaking middle-aged owners as the primary source of home improvement spending. Even though homeowners aged 35–54 still spend the most per household on average, their share of market spending has shrunk from well over 50 percent in 1995–2005 to just 41 percent since 2015.

Older homeowners are living longer and are increasingly willing and able to spend for home improvements that allow them to remain safely in their current homes. At the same time, younger households have struggled to gain a foothold in the homeownership market since the housing crash. Nonetheless, the number of owners under age 35 is finally showing signs of a rebound—and so is their remodeling spending.

FIGURE 6

The Growing Number of Older Owners, Along with Higher Average Spending, Have Lifted Their Improvement Expenditures

Percent Change, 1997–2017



Note: Values are adjusted for inflation using the CPI-U.
Source: JCHS tabulations of HUD, American Housing Surveys.

STRONG DEMAND AMONG OLDER HOMEOWNERS

Over the past 20 years, the number of homeowners age 55 and over surged 60 percent from 26 million to more than 42 million, increasing their share of all owners from 40 percent to almost 55 percent. Not only are there significantly more older homeowners, but average spending among this age group also increased 57 percent between 1997 and 2017, to nearly $2,800 **(Figure 6).** In combination, these changes have meant that real aggregate spending among older owners grew more than 150 percent over the decades, to $117 billion. By comparison, total market spending was up just 9 percent among owners under age 35 and 12 percent among owners aged 35–54 over this period.

Growth in average spending by owners age 65 and over was especially strong, rising nearly 80 percent to $2,500 between 1997 and 2017 and surpassing the previous peak for this age group by 11 percent. Although not yet back to peak, real average spending by owners aged 55–64 was also up 33 percent since 1997. In contrast, average improvement spending levels among 35–54 year-old homeowners increased less than 20 percent over the two decades.

In 2017, households age 55 and over thus accounted for fully half of all homeowner improvement spending nationally. Owners aged 55–64 were responsible for 25 percent of expenditures (up from 16 percent in 1997), and owners age 65 and over the other 25 percent (up from 15 percent). Major metro areas where homeowners age 55 and over made up even larger shares of the local remodeling market in 2017 included Birmingham (59 percent), Richmond (57 percent), San Francisco (56 percent), San Jose (64 percent), and Tampa (60 percent).

Older homeowners tend to devote a larger share of their improvement dollars (51 percent) to replacing home components and systems—such as roofing, siding, windows, and plumbing—than younger homeowners (43 percent). In addition, older owners are increasingly focused on making their homes more accessible. Nearly 3 million homeowners—more than 72 percent of which were at least age 55 in 2017—reported one or more projects that would improve accessibility for the elderly or disabled.

Homeowners making accessibility improvements spend more on average for all types of projects than homeowners remodeling for other reasons. The difference in expenditures is 30 percent for owners under age 55, but about 40 percent for owners age 55 and over. Although the American Housing Survey does not identify specific projects as accessibility retrofits, these improvement projects likely include higher-priced modifications such as bathroom and kitchen remodels, as well as room additions to allow for single-floor living or to accommodate aging parents or caregivers. Indeed, homeowners age 55 and over making accessibility improvements spent significantly more of their home improvement budgets (36 percent) on remodeling kitchens and baths and on adding rooms than same-age owners who did not cite accessibility as a motivation for their projects (23 percent).

UPTURN IN SPENDING BY YOUNGER OWNERS

Older homeowners have come to dominate the remodeling market in part because homeownership rates among younger households have languished in the years since the housing crash. The affordability barriers for first-time buyers are formidable, with prices of entry-level homes rising sharply and mortgage interest rates up from historical lows. Years of weak income growth and the burden of large student loans have also prevented many younger households from saving for a downpayment or being able to afford the monthly costs of homeownership.

As challenging as the employment and housing markets are for younger households, the number of homeowners under age 35 did rise 6 percent between 2015 and 2017 to 7.3 million—the first increase in a decade. Improvement spending among this age group grew even faster, climbing 20 percent in real terms over this period to about $22 billion **(Figure 7).** Although the number of younger owners is still 3 million or about 30 percent lower than at the peak of the housing boom in 2007, their average per owner improvement spending rebounded 38 percent from $2,100 to $2,900 between the 2013 low and 2017—far more than the 6 percent increase among owners age 35 and over. With these gains, per owner spending among younger owners in 2017 nearly matched the prior peak of $3,000 in 2007.

One explanation for this rebound in spending is that younger homeowners today have higher incomes than their counterparts coming out of the Great Recession. After several years of decline, the median household income for homeowners under age 35 rose 17 percent in real terms between 2013 and 2017, to $80,000. This trend likely reflects the impact of the restrictive credit environment on many younger would-be homebuyers with imperfect credit histories, high debt, or modest incomes.

As a group, younger homeowners are spending more of their improvement budgets on major projects costing $50,000 or more (34 percent) than same-aged households in 1997 (25 percent). At the same time, though, the share of younger owners making these high-end improvements is still lower than the 41 percent at the peak of the market in 2007.

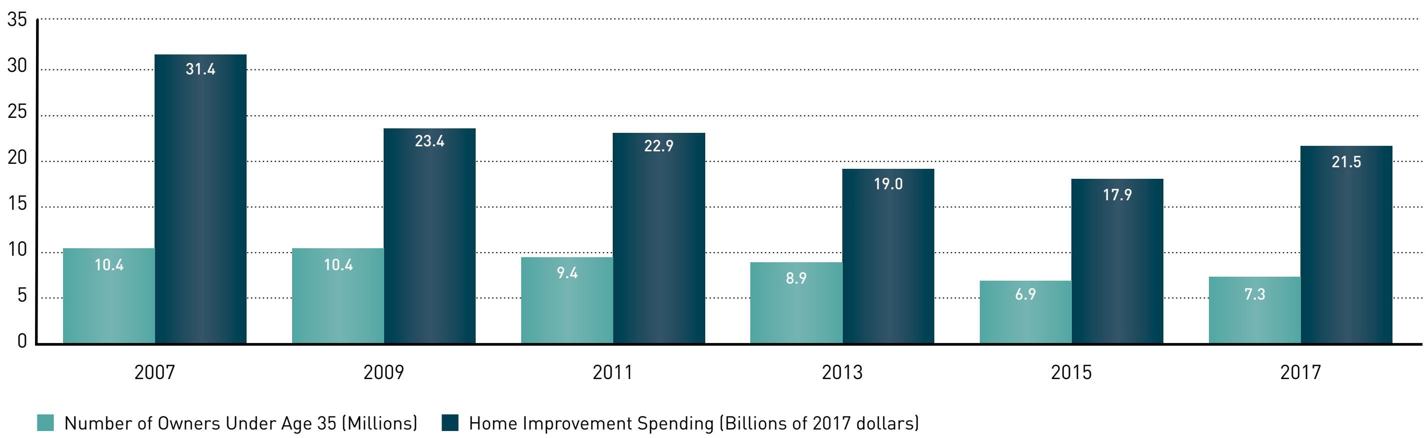
Overall, homeowners under age 35 spent 21 percent of their home improvement dollars on kitchen and bath remodels in 2017, a slightly larger share than their counterparts during the housing boom ten years earlier. They also spent 9 percent more on average for these upgrades in real terms. Another 17 percent of their remodeling budgets was for replacements of plumbing, electrical, and other home systems, up from 13 percent in 2007.

THE OUTLOOK

The Joint Center's latest household growth projections indicate that demographic trends alone should lift the number of homeowners over the next two decades. The millennials, the largest generation in US history, will age into their 30s and 40s, prime age groups for starting families and purchasing homes.

FIGURE 7

After Years of Decline, Both the Number of Young Homeowners and Their Spending on Home Improvements Have Finally Turned Up



Source: JCHS tabulations of HUD, American Housing Surveys.

Meanwhile, the baby boomers will age into their 70s and 80s, replacing the much smaller cohort that preceded them.

As more lower- and middle-income households move into homeownership, however, the recent jump in per owner improvement spending among the under-35 age group is likely to slow to a more sustainable pace. Even so, expected growth in the number of younger homeowners should more than offset this slowdown and keep aggregate expenditures among this age group on the rise. Nonetheless, the ability of younger households to make the transition to homeownership is ultimately the key to the remodeling market outlook.

Meanwhile, the growing number of older homeowners will bring new demand for accessibility modifications to existing homes. As it is, few homes in the US are configured with single-floor living, no-step entry, and extra-wide halls and doorways—features that make housing accessible to older adults or those with disabilities. While newer homes are more likely to offer these features, the shortage of accessible units will continue, particularly in slower-growing areas of the Northeast and Midwest where homebuilding is more constrained.

Composition of Homeowner Improvement Spending

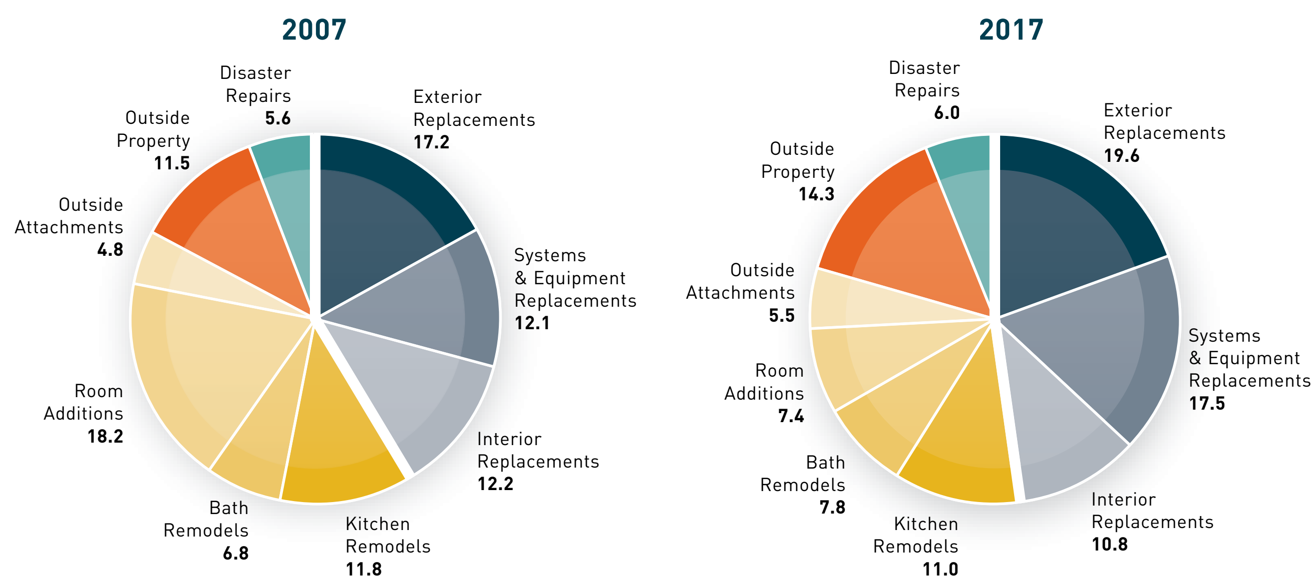
Improvements to owner-occupied homes make up the largest segment of the broader remodeling market, accounting for fully 55 percent of total expenditures in 2017. According to Joint Center analysis of the latest American Housing Survey, 22 million US homeowners completed at least one home improvement project that year. The types of projects undertaken were diverse, ranging from a relatively simple window or door replacement, to upgrading heating or cooling systems, to a complete kitchen remodel or room addition.

Most homeowners spent only modest amounts on their remodeling projects, with 40 percent reporting expenses of less than $2,500. Almost three-quarters had expenditures of less than $10,000. Even so, owners that completed large projects accounted for a significant share of the $233 billion homeowner improvement market in 2017. Indeed, owners spending $50,000 or more contributed a third of national improvement outlays, while owners spending at least $25,000 contributed over half.

FIGURE 8

Replacement Projects Take Up a Larger Share of Homeowner Improvement Budgets Than Before the Recession

Share of Home Improvement Spending (Percent)

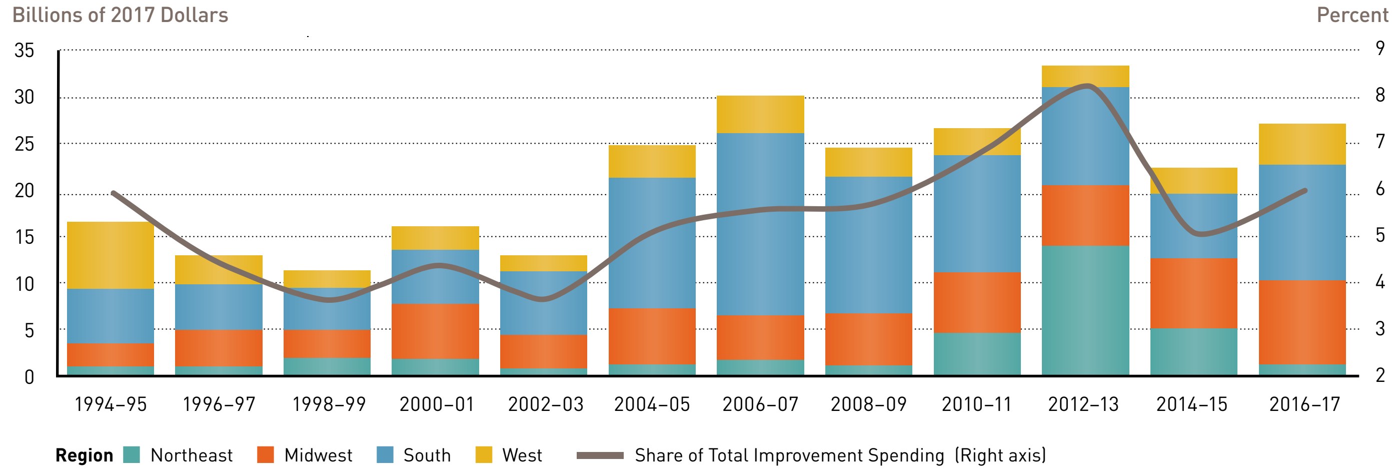


Notes: Replacements include exterior, systems and equipment, and interior projects. Discretionary projects include kitchen and bath remodels, room additions, and outside attachments. See Table A-1 for more detailed definitions of project categories. Homeowner improvement spending totaled $220 billion in 2007 and $233 billion in 2017.

Source: JCHS tabulations of HUD, American Housing Surveys.

FIGURE 9

Spending for Disaster Repairs Is Trending Up Across the Country



Source: JCHS tabulations of HUD, American Housing Surveys.

EMPHASIS ON ENERGY EFFICIENCY AND OTHER REPLACEMENT PROJECTS

Historically, the share of homeowner spending on replacement projects (including exterior and interior replacements and systems and equipment upgrades) has matched the share of spending on discretionary projects (including kitchen and bath remodels, room additions, and outside attachments) at about 40 percent of total expenditures. Coming out of the last downturn, however, the replacement share climbed to almost 50 percent, where it has remained **(Figure 8).**

The growing focus on interior and exterior replacements and system upgrades likely reflects necessary investments deferred during the recession. The aging of the housing stock is also a factor. With homebuilding activity still below historical averages, the median age of owner-occupied homes nationally rose to 39 years in 2017, up from 32 years in 2007 and 29 years in 1997. The aging of the population and decline in household mobility have also played a role, given that older and longer-term homeowners typically spend more of their improvement budgets on replacement projects.

Many common replacement projects are also directly related to home energy use. In 2017, homeowners spent $68 billion—29 percent of total owner market expenditures—on improvements to roofing, siding, windows, doors, HVAC systems, and insulation. All of these types of projects have the potential to generate large energy savings. In fact, over 17 percent of homeowners cited energy efficiency as the motivation for their projects, up from 11 percent in 2013. The share of owners making energy-efficient retrofits was especially high in Boston (23 percent), Chicago (20 percent), Detroit (21 percent), Minneapolis (26 percent), and Rochester (22 percent)—metros with relatively old housing stocks and harsh winter weather conditions.

THE SHRINKING DIY MARKET

Among owners reporting improvements, the share of spending on DIY projects—which includes only the owner's material costs—fell steadily from 25 percent in 1997 to 22 percent in 2007 to just 18 percent in 2017. Again, the aging of the US population explains at least part of this long-term decline, given that older owners are much less likely than younger owners to be do-it-yourselfers.

In 2017, fully 88 percent of improvement spending by homeowners age 65 and over was for professionally installed projects compared with 69 percent of spending by owners under age 35. But younger households are also spending relatively less on DIY projects, with the DIY share of outlays by owners under age 35 trending downward from about 35 percent in 1995–2005 to 31 percent in 2017.

The increased emphasis on replacement projects has also contributed to the shrinking DIY market. Even homeowners skilled at common DIY projects like painting, tile-setting, and deck laying are likely to hire professional contractors for projects such as electrical, plumbing, and roofing upgrades.

Indeed, 86 percent of spending on replacement projects in 2017 was for professional installation, significantly more than the 76 percent share for discretionary projects.

GROWTH IN POST-DISASTER SPENDING

As natural disasters become more frequent and more devastating, national spending on restoration of damaged owner-occupied homes continues to grow in both absolute terms and as a share of improvement expenditures. Homeowner outlays for disaster-related improvements exceeded $27 billion in 2016–2017, nearly double the two-year average of $14 billion two decades earlier **(Figure 9).** Aggregate spending growth has been especially strong in the South and Midwest. Meanwhile, disaster repair spending as a share of national improvement expenditures trended upward from an average of 4.5 percent between the mid-1990s and the mid-2000s to 6.2 percent over the last decade.

In 2016–2017, 17 percent of disaster restoration spending to the owner-occupied housing stock resulted from tornadoes and hurricanes, 18 percent from flooding, 22 percent from lightning and fire damage, and 43 percent from snow, hail, windstorms, and other severe weather events. Almost half (46 percent) of homeowner outlays were concentrated in the South and a third in the Midwest. Of the 25 metro areas tracked by the 2017 American Housing Survey, five—including Chicago, Dallas, Houston, Minneapolis, and San Antonio—reported disaster repair spending of at least $500 million during those two years.

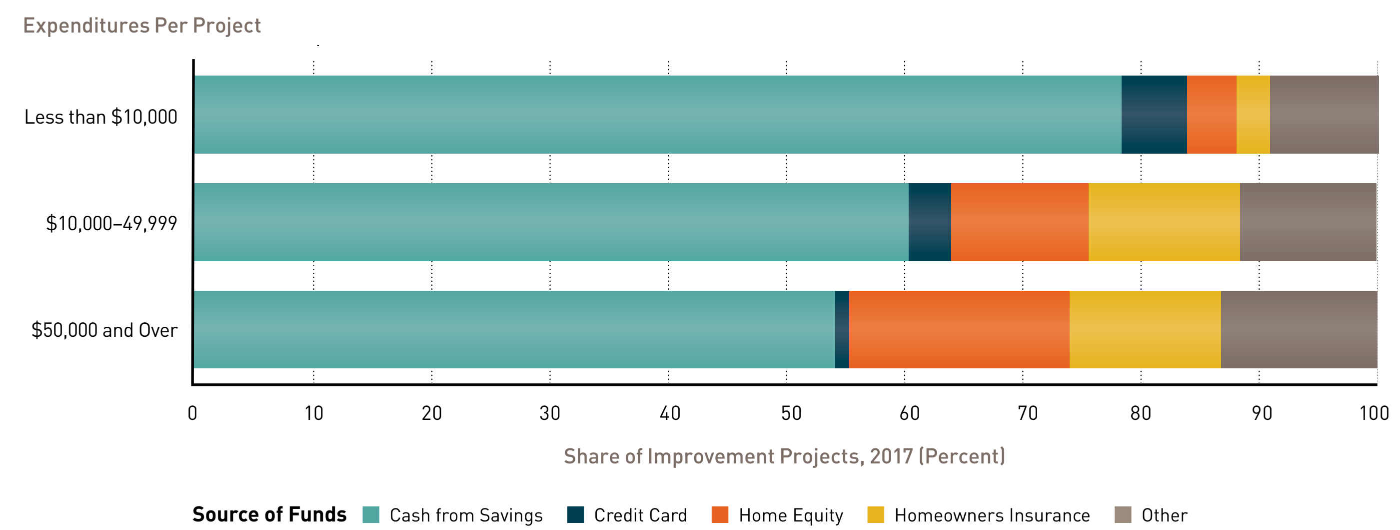
While insurance payouts covered the majority of disaster repair costs in 2016–2017, homeowners paid out of pocket for more than four in ten projects. In these cases, owners tend to spend significantly less on restoring their homes. For example, owners with insurance payouts spent $20,000 on average for restoration projects in 2016–2017, but just $12,000 if they paid for the repair of disaster damages on their own.

TRENDS IN PROJECT FINANCING

Although per owner spending on home improvements averaged $3,000 in 2017, half of all individual project spending was under $1,200. Households typically pay for these small projects—such as adding or replacing appliances, plumbing fixtures, water heaters, security systems, or insulation—out of pocket. Indeed, homeowners used cash from savings to pay for 77 percent of home improvement projects in 2017. The next-largest identifiable funding sources were credit or retail store charge cards (5 percent of projects) and home equity loans or lines of credit and cash from mortgage refinancing (5 percent). Homeowner insurance settlements covered 4 percent of projects, while “other” means (such as contractor-arranged financing, gifts from family members, and personal loans) paid for over 9 percent.

FIGURE 10

As Project Size Increases, Homeowners Rely Less on Savings to Finance Improvements



Notes: Credit card category includes retail store charge cards. Home equity includes cash from refinancing, home equity loans, and home equity lines of credit. Other includes contractor-arranged financing and all other funding sources, including those not reported.

Source: JCHS tabulations of HUD, American Housing Survey.

As project scope increases, however, homeowners are much more likely to tap home equity or other forms of financing to cover the costs. The share of projects paid for with cash steadily shrinks from 78 percent of improvements costing less than $10,000, to 60 percent for those costing $10,000 to $49,999, to 54 percent for those costing $50,000 or more **(Figure 10).** After cash from savings, the most common sources of funding for major projects are home equity loans or lines of credit and cash-out refinances (19 percent of projects) and insurance settlements (13 percent).

Along with project size, financing varies considerably by type of installation. Owners used cash for 84 percent of DIY projects in 2017, compared with 72 percent of work done by professional contractors. The shares of DIY projects paid for with cash are especially high for landscaping (91 percent), security systems (90 percent), and driveways or walkways (88 percent), with average spending ranging between $600 and $1,200 per project. At the same time, homeowners were much less likely to use savings to pay for major professional projects like roofing (54 percent), siding (60 percent), and room additions (64 percent), which have much higher average project costs that range from $6,000 to $26,000.

Average project costs range widely depending on the payment method. When owners pay with savings or credit cards, average spending is about $3,300, but almost double that amount for projects with contractor-arranged financing ($6,500). If owners tap their equity for funds, project spending increases to almost $7,500 if the source is a cash-out refinance and $9,300 if it is a home equity loan or line of credit.

Indeed, expenditures for larger, professionally installed projects increase significantly if homeowners use home equity to pay. For example, the average cost of a professional kitchen remodel jumps from $15,000 if funded with cash to almost $26,000 if financed through a home equity loan or line of credit. Similarly, the use of equity also increases average spending for professional bath remodels from $9,000 to $15,000 and that for room additions from $22,000 to $43,000.

THE OUTLOOK

With the aging of the housing stock and the decline in household mobility, homeowners now spend nearly half of their improvement dollars on replacements of home components and systems. The share of replacement projects is likely to remain high in the coming decade as the housing stock ages and the number of older homeowners continues to grow. Since these types of projects generally require professional installation, the DIY share of spending is therefore expected to remain relatively low.

While many replacement projects like new roofing, windows, HVAC systems, and insulation are energy-sensitive, the recent moderation in energy prices has reduced the payback from upgrades. If energy prices remain subdued—whether because of increased production or weaker demand due to an economic recession—the motivation to undertake further energy-efficient retrofits may also be limited.

At the same time, homeowner spending on disaster repairs is likely to climb. Joint Center research has found that owners typically spread renovations over two or three years following an event. With the highly destructive hurricanes and wildfires that occurred in 2017 and 2018, a large backlog of disaster repair spending may well have already developed. If the trend of stronger and more frequent events continues, expenditures on disaster-related repairs to homes will no doubt increase.

Finally, offering homeowners additional financing options could be a promising growth opportunity for the remodeling industry. Owners' heavy reliance on cash savings to fund improvement projects limits the amount they are able to spend. As a result, expanding the types and availability of new financing alternatives—especially those tied to home equity—would likely lead to significantly stronger growth in improvement expenditures while at the same time help preserve and modernize the nation's housing stock.

TABLE A-1

Homeowner Improvement Expenditures: 2017

	Homeowners Reporting Projects (000s)	Average Expenditure ($)	Total Expenditures (Millions of $)
DISCRETIONARY	**5,990**	**12,361**	**74,039**
Kitchen Remodels	**2,092**	**12,255**	**25,635**
Minor	1,788	6,886	12,315
Major	303	43,907	13,320
Bath Remodels	**2,869**	**6,362**	**18,255**
Minor	2,445	3,435	8,397
Major	425	23,206	9,858
Room Additions	**726**	**23,799**	**17,280**
Kitchen	79	29,685	2,353
Bath	137	12,095	1,658
Bedroom	210	17,906	3,755
Recreation	98	25,785	2,528
Other	413	16,899	6,985
Outside Attachments	**1,911**	**6,733**	**12,869**
Porch, deck, patio or terrace	1,666	5,846	9,738
Garage or carport	368	8,512	3,131
REPLACEMENT	**18,544**	**6,005**	**111,368**
Exterior	**7,160**	**6,377**	**45,656**
Roofing	3,383	7,674	25,962
Siding	968	5,054	4,893
Windows or doors	3,722	3,442	12,808
Chimney, stairs or other major improvements to exterior	766	2,604	1,994
Interior	**6,520**	**3,849**	**25,095**
Insulation	1,356	1,483	2,010
Carpeting, flooring, paneling or ceiling tiles	5,219	3,283	17,136
Other major improvements inside home	739	8,054	5,948
Systems and Equipment	**13,577**	**2,992**	**40,617**
Internal water pipes	1,507	1,563	2,355
Plumbing fixtures	4,096	1,360	5,569
Electrical wiring, fuse boxes or breaker switches	2,244	1,473	3,304
HVAC	3,819	5,878	22,445
Central air conditioning	2,741	5,113	14,017
Built-in heating equipment	2,224	3,790	8,428
Appliances/Major Equipment	8,159	851	6,944
Water heater	3,551	976	3,467
Built-in dishwasher or garbage disposal	3,734	570	2,129
Security system	2,143	628	1,347
OTHER	**7,540**	**6,268**	**47,260**
Disaster Repairs	**807**	**17,322**	**13,972**
Improvements to Lot or Yard	**6,951**	**4,789**	**33,288**
Septic tank	177	4,338	770
Driveways or walkways	1,929	3,220	6,211
Fencing or walls	2,225	2,356	5,242
Swimming pool, tennis court, or other recreational structure	484	11,906	5,758
Shed, detached garage, or other building	1,169	5,168	6,040
Landscaping or sprinkler system	2,770	2,497	6,918
Other major improvements to lot or yard	407	5,767	2,350
Total	**21,938**	**10,605**	**232,666**

Notes: Homeowner numbers do not add to total because respondents may report projects in more than one category. Major remodels are defined as professional home improvements of more than $30,000 for kitchen projects and more than $15,000 for bath projects, and DIY improvements of more than $12,000 for kitchen projects and $6,000 for bath projects.

Source: JCHS tabulations of HUD, American Housing Survey.

Historical tables and additional detail on home improvement expenditures are available for download in Microsoft Excel format at www.jchs.harvard.edu.

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