Executive Summary

The residential remodeling industry now rivals home building in size, generating expenditures of about $150 billion a year and accounting for about 2% of gross domestic product (GDP). Indeed, because remodeling activities often stimulate additional spending for such items as home furnishings, major appliances, and lawn and garden products, these numbers understate the industry's importance.

Beyond its contribution to the economy, the remodeling industry plays a critical role in preserving and enhancing the nearly 120 million units that comprise the nation's $8 trillion investment in housing. The remodeling decisions of almost 70 million property owners have direct consequences for the health and safety of residents, as well as the satisfaction they derive from their homes.

Still, almost no research exists on fundamental remodeling industry issues such as which households are most likely to make home improvements, and what their motivations for doing so are. More attention has been paid to understanding home building and how recent advances in design, materials, and technologies are being applied to new homes. But home building adds only about 1-2% to the housing stock each year. Remodeling, in contrast, is the process by which owners of the other 98-99% of homes strive to adapt their units to contemporary tastes and higher standards of health, safety, and comfort.

Why Remodel?

As homes age, their physical condition deteriorates and their styles, features, and systems become outmoded. Remodeling activities help property owners maintain the structural integrity of their units, update homes, and adjust the size and layout to changing family needs. For purposes of this report, remodeling—also referred to as home improvements and repairs—consists of those activities that enhance residential structures and grounds.

With the median age of both owner- and renter-occupied homes in the United States now approaching 30 years, many systems—such as furnaces, hot-water heaters, windows and doors, and roofs—are candidates for replacement. Not surprisingly, then, property owners invested over $33 billion in 1995 on major replacements in the home.

Discretionary projects, in contrast, reflect the owners' desire for updated amenities or expanded living space. In 1995, Americans spent over $35 billion on kitchen and bathroom remodels, as well as additions and structural alterations to other rooms. Homeowners also spent about $18 billion on such exterior improvements as detached garages,

swimming pools, patios, and fencing, and about $5 billion to repair damage caused by natural disasters.

Who Remodels?

As might be expected, homeowners are more likely to remodel than owners of rental housing. Homeowners remodel for a variety of lifestyle reasons, as well as to maintain the value of their properties; rental property owners see remodeling as a financial investment. Homeowners are also more likely to make alterations to accommodate their changing family circumstances, while landlords seldom remodel to adapt to changes in the needs or incomes of tenants.

About 25 million homeowners undertake some type of home improvement project each year. Household composition and income are two key factors influencing expenditures. In particular, as household income rises, so too does the probability of undertaking a home improvement project. As a result, the 11% of households with incomes of $100,000 or more account for almost one-fourth of all remodeling expenditures. With the baby boomers now in their peak-earning ages of their 40s and 50s, they have the financial resources to make even more discretionary improvements in their homes.

Meanwhile, the types of households that are most likely to remodel are married couples with children, who often invest in additions or other projects that expand their living space to accommodate growing families. In fact, the birth of a child is one of the major motivations for remodeling.

The distribution of remodeling spending across homeowners is sharply skewed. The top 10% of spenders are typically responsible for more than half of all improvement expenditures. At the other end of the spectrum, the bottom third of spenders account for only 1% of total expenditures.

In terms of timing, trade-up buyers spend the most on remodeling within the first 24 months after purchasing a home. Indeed, the longer trade-up buyers live in their units, the less likely they are to remodel. They spend an average of nearly $5,000 shortly after the purchase—in part because they usually have the equity to finance improvements and in part because they are clearer about what they want in their new homes. First-time buyers, in contrast, are often strapped for cash and therefore spend an average of $1,500 in the first two years after they move, but their spending eventually catches up with that of other homebuyers.

Rental remodeling accounts for only about a quarter of overall spending in the market. Relatively stagnant rents of the past decade have discouraged many landlords from investing heavily in improvements and repairs. In addition, renter-occupied units are typically located in multi-family buildings, which allow fewer options for reconfiguring space. For this reason, and because they view remodeling strictly as a financial investment, landlords are more likely to replace worn-out systems than to remodel their properties.

Close to half of the rental stock is owned by individuals who hold only one or just a few units. In addition, many of these units are single-family homes. This means that some rental property owners may make their remodeling decisions more like homeowners than large institutional investors.

Who Does the Work?

Remodeling is unique among construction activities in that "do-it-yourself" (D-I-Y) owners undertake a large portion of the work rather than hire professional contractors. In fact, half of all remodeling homeowners perform D-I-Y projects, accounting for about $20 billion in materials spending each year.

Do-it-yourselfers focus on discretionary home improvements, and are responsible for upgrading the same number of kitchens—and even more bathrooms—than contractors. Do-it-yourselfers do, however, tend to leave replacement jobs like roofs or heating systems to professionals.

Typical D-I-Y homeowners are young married couples with younger children. Older and/or single homeowners, in contrast, are much more likely to hire a contractor to make improvements and repairs. With the aging of the U.S. population, the D-I-Y share of home improvements has therefore fallen for several years.

Helping to offset this decline, however, is the emerging "buy-it-yourself" market—owners who purchase products from home improvement centers and then hire a contractor to do the installation. A generation ago, homeowners recognized that while they could save on labor costs by doing it themselves, they would pay more for materials than contractors, who could buy at a discount. Today, home improvement centers have eliminated much of this margin. Indeed, even remodeling contractors increasingly buy from home centers.

Even though the share of work performed by professionals is growing, the remodeling contractor industry remains highly fragmented—characterized by easy entry but high failure rates. The nation's top 100 payroll establishments that specialize in remodeling capture only 6.5% of total receipts generated by remodeling firms. Moreover, of the 800,000 or so remodeling contractors operating in this country, an estimated 70% are self-employed individuals.

What Is the Outlook?

The remodeling industry will grow stronger as long as the forces propelling it—rising homeownership, growing incomes, and an aging housing stock—continue. While aging of the baby boomers will fuel growth in the number of homeowners, it will also result in a slight decline in average spending per owner as older boomers move out of the peak remodeling years. At the same time, the median age of the housing stock, average household incomes, and the average size of homes, are all expected to increase. Between 1995 and 2010, average growth in remodeling expenditures is therefore projected to accelerate slightly to 2.0% annually.

The dynamics of the remodeling industry itself seem poised for change. The proportion of do-it-yourselfers will continue to drop as more and more homeowners turn to professional contractors for their home improvement projects. Tomorrow's remodeling businesses, however, may have a new structure. As retailers and distributors expand their installed sales programs (selling branded home improvement products and then arranging for installation), remodeling contractors will be under greater pressure to consolidate. Firms with technological sophistication will benefit from the resulting efficiencies. Larger, more established firms will enjoy a competitive advantage as homeowners increasingly look for reputation and warranties over price in making their contracting choices.

Still, challenges remain for the remodeling industry. Manufacturers, distributors, and contractors will need to coordinate efforts to ensure that consumers view remodeling as an attractive, convenient and dependable means of achieving their housing goals. In addition, there are millions of structurally deficient homes whose owners have insufficient resources to make repairs and improvements. With the collaboration of government, the remodeling industry could better reach this underserved market segment.

CHAPTER 1

Residential Remodeling Market Overview

SUMMARY

- **Remodeling activities serve to safeguard the nation's nearly $8.0 trillion investment in housing.**
- **Although more volatile, spending on home remodeling tracks the general business cycle.**
- **In addition to extending the life of a structure, remodeling allows owners to update older homes to meet changing space needs, technologies, and tastes.**

Each year, homeowners and landlords invest billions of dollars in residential properties. Whether replacing a leaky roof, remodeling a kitchen, updating an electrical system, or repairing a doorlock, the decisions of millions of individuals together define the quality of the nation's housing stock, its adequacy as shelter, and its value as an investment.

Understanding how owners make their decisions about residential remodeling (improvements and repairs) is therefore important not only to the industries providing the goods and services that support these projects, but also to the well-being of all American households. Homes that are poorly maintained not only lose value but also threaten the health and safety of occupants, ultimately leading to neighborhood deterioration and significant public costs.

Even though the combined stock of owner- and renter-occupied housing constitutes fully 35% of the nation's tangible assets, the dynamics of residential remodeling—the mix of activities that preserve and enhance this $8.0 trillion investment—are little understood. The uncertainty ranges all the way from the specific factors that shape the timing and nature of individual property owners' decisions to the magnitude of the home remodeling market itself.

This report begins the investigation of residential remodeling by measuring the dimensions of the market, its contribution to the national economy, and its importance to the nation's aging housing stock. Following this introduction, the next two sections offer detailed analysis of the spending behavior of homeowners, including do-it-yourselfers. Subsequent sections summarize the available evidence about the structure of the remodeling contractor industry and the decisions of rental property owners. The final section presents the Joint Center's 15-year projections of remodeling expenditure growth and speculates on the future of the market.

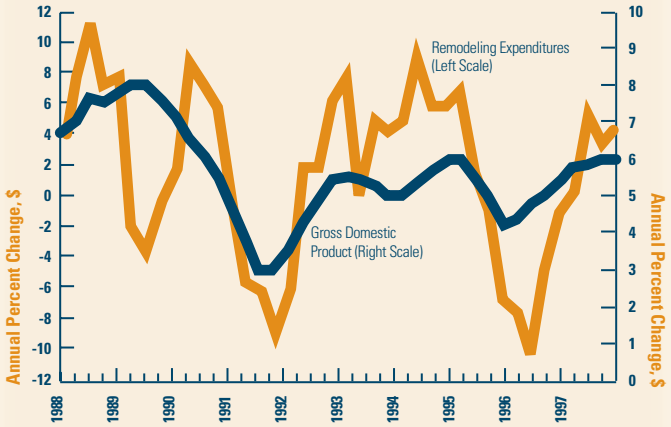
Measuring the Remodeling Market

As important as home improvements and repairs are to preserving the national housing inventory, industry estimates inadequately measure spending in the remodeling market. Even the major government surveys that gather information on ostensibly similar housing improvements publish strikingly different figures.

The U.S. Department of Housing and Urban Development's American Housing Survey (AHS), for example, reports that homeowners alone spent about $114 billion on improvements and repairs ($107.5 billion for single-family homes and $6.5 billion for condominiums and mobile homes) in 1995. The U.S. Commerce Department's quarterly

Figure 1.1

Remodeling Expenditures Follow The Business Cycle



Source: U.S. Department of Commerce C-50 Reports ; Bureau of Economic Analysis, National Income and Product Accounts of the U.S..

survey of Expenditures for Residential Improvements and Repairs (Series C-50), in contrast, reports owner spending of less than $79 billion for that year (Table A.1).

Of the two estimates, the AHS is likely to be closer to the mark because it is based on a larger sample and includes mobile homes, condos, and more detailed questions about remodeling. The AHS does not, however, collect information on rental improvements and repairs. In fact, the Commerce Department provides the only regular estimates of these expenditures, reported to total $33 billion in 1995 when combined with spending on vacant and second homes.[1]

Combining the AHS estimate of homeowner spending with the C-50 estimate of rental property spending, the Joint Center for Housing Studies estimates that expenditures for home improvements and repairs in 1995 totaled just under $150 billion. This, too, likely understates final expenditures because it does not include the amounts spent on conversions of nonresidential buildings to residential uses and improvements to homes by non-occupant owners (such as developers that rehabilitate and resell older homes without occupying them).

Remodeling and the National Economy

Assuming that just under $150 billion is a reasonable (if conservative) estimate of annual remodeling activity, spending on improvements and repairs to residential buildings and grounds contributes over 2% of gross domestic product (GDP).

But direct spending is just the beginning. Home improvements often trigger purchases of equipment and furnishings for the remodeled space. Remodeling stimulates spending on home furnishings and accessories, major appliances, audio and video equipment, lawn and garden supplies, and other household products each year.

The same factors that stimulate economic growth—strong employment gains, high levels of consumer confidence, and low interest rates—are also associated with strong remodeling activity. Since the majority of expenditures are for relatively expensive improvements such as a kitchen or bath renovation, swings in economic growth have a powerful effect on spending levels.

While spending on residential remodeling thus

1. In a related study, the Joint Center for Housing Studies has developed a more timely and less volatile measure of homeowner improvement spending, known as the Remodeling Activity Indicator. For a description, see Kermit Baker, J. Michael Collins, and Andrea Hopf, "Development of a Leading Indicator for the Homeowner Improvement and Repairs Market," Joint Center for Housing Studies Working Paper 98-6, October 1998.

tracks the general business cycle, it is much more volatile (Figure 1.1). Indeed, the boom-bust character of this industry poses particular challenges for manufacturers, distributors, and contractors alike.

Over the past 15 years, homeowner remodeling expenditures have grown about 1.8% annually (after adjusting for inflation)[2]—more slowly than the 2.7% pace of the overall economy, but faster than the 0.5% growth rate of home building. The remodeling market is less volatile than home building because households tend to undertake necessary maintenance and repair projects regardless of economic conditions (Figure 1.2). Nevertheless, discretionary projects such as room additions, major interior alterations, and kitchen and bath remodeling are, like new construction, just as sensitive to economic conditions (Table A.2).

The Aging Housing Stock

Just as the U.S. population is aging as a result of past patterns of births and longer life spans, the housing stock is also aging as a result of past patterns of home building and lower loss rates. The increased longevity of homes reflects efforts to rehabilitate rather than remove badly deteriorated housing and progress in reducing the num-

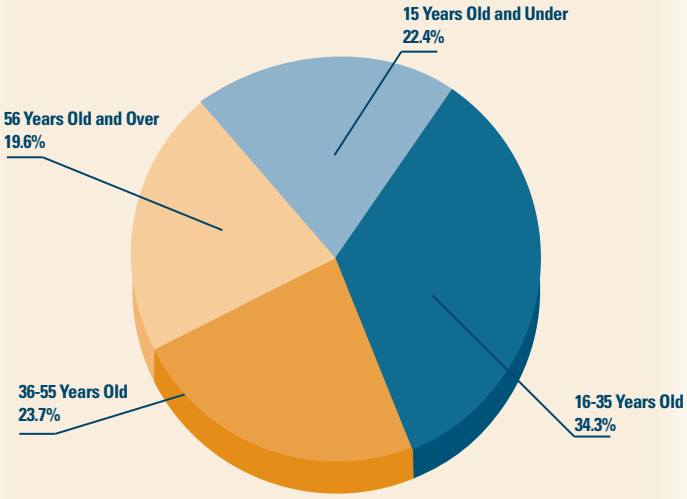
Figure 1.2

Remodeling Is Less Volatile Than New Construction

Source: U.S. Department of Commerce C-30 and C-50 Reports.

Figure 1.3

Nearly Half of Owner-Occupied Homes Are Over 35 Years Old



Source: 1995 American Housing Survey.

2. Commerce Department estimates are so volatile that base-year selection dramatically affects estimated growth rates. For this reason, we averaged ten-year growth rates over the period.

Figure 1.4

The Trend Toward Larger Homes Continues

	New in 1995	Existing Built 1980-95	Existing Built 1960-79	Existing Built 1940-59	Existing Built Pre-1940
Total (Millions)	1.1	16.3	22.7	13.5	11.1
4 or More Bedrooms (Share)	30%	24%	24%	15%	24%
2 or More Bathrooms (Share)	89%	80%	56%	32%	26%
Size (Median Sq. ft.)	1,920	1,800	1,740	1,600	1,900
1995 Value (Median)	$133,900	$110,000	$90,000	$80,000	$75,000

Sources: 1995 American Housing Survey and U.S. Department of Commerce C-25 Reports, 1995.

ber of severely inadequate homes. Indeed, the share of homes lost each year to abandonment, fire, natural disasters, and other causes has declined from just under 1% in the 1960s to about 0.25% today.

In 1985, the typical owner-occupied home was 23 years old. By 1995, the median age had increased to 27 years (Figure 1.3). During this same period, the median age of rental units rose even faster, from 23 years to 30 years, as cutbacks in multi-family construction encouraged the preservation of existing units.

Older units differ in significant ways from newly built homes. Newer homes are more spacious. Houses built in 1995 are almost 200 square feet larger on average than those constructed in the 1960s and 1970s, and more than 300 square feet larger than those built in the 1940s and 1950s even with additions to these older homes (Figure 1.4). Recently built homes are more likely to have a family room, home office, a larger kitchen, a master bathroom, a two- or three-car garage, and more storage space than older homes. Moreover, newer homes are built to stricter energy efficiency, health and safety standards, incorporating more insulation, safer electrical and heating systems, and eliminating such hazards as lead-based paint and asbestos.

As homes age, expenditures for maintenance and repairs are essential to prevent physical deterioration. But changing styles, technologies, and space needs also encourage owners of older homes to invest in improvements to expand or otherwise enhance their residences. In this way, remodeling is the process that enables the aging housing stock to adjust to contemporary preferences.

For example, the most recent American Housing Survey reveals that nearly 34 million single-family homeowners undertook one or more home

Figure 1.5

34 Million Homeowners Undertook Improvements in 1994-95

	Number of Owners Reporting Projects (Millions)	Total Expenditures (Billions $)
Kitchens and Bathrooms	6.9	37.6
Other Additions/Alterations	6.8	28.9
Replacements	26.6	62.4
Improvements to Property and Disaster Repairs	12.5	43.4
TOTAL	33.8	172.4

Notes: Excludes owners of mobile homes, condos and co-ops. Numbers don't add to total because households can report projects in multiple categories.
Source: Table A-3.

improvement projects during the two-year period 1994-95 (Figure 1.5). Owners spent about $38 billion on kitchen and bathroom projects, and $29 billion on additions and other improvements to the interior of their homes.

Meanwhile, spending for replacements totaled more than $62 billion. The most common projects were adding or replacing equipment and built-in appliances (such as water heaters and dishwashers); windows and doors; flooring, paneling, or ceilings; and HVAC systems and roofs.

And nearly 12 million owners made improvements to the grounds or other structures on their properties. Projects in this category include construction of detached garages, swimming pools, driveways, fencing, and patios. Overall spending on improvements to the property and structures other than the principal home amounted to nearly $34 billion. Finally, owners report expenditures for home repairs resulting from floods, fires, tornadoes, and other natural disasters of $9.5 billion over this period.

Definitions Used in This Report

The term "remodeling" is used to denote improvements and repairs. The term "improvements" refers to any activities that enhance residential structures and grounds, such as:

- *Replacing a worn, broken, or outdated component* (including replacement of the roof, siding, and heating, plumbing, and electrical equipment).
- *Updating or upgrading the condition of the home* (such as installing a more contemporary kitchen sink or bathtub for aesthetic reasons or to replace a worn out fixture).
- *Modifying the use of the home* (including building an addition or finishing unfinished space). This category of home improvement is often combined with the updating or upgrading category, collectively referred to as "discretionary improvements."

The term "repair" refers specifically to those activities, short of replacements, that maintain the home in acceptable condition, such as fixing a leaking faucet or painting or papering a room.

All spending estimates in this report exclude appliances that are not attached to the structure. Also excluded are purchases of hardware and equipment (such as tools, lawn mowers, paintbrushes and the like) used by owners and contractors to repair, maintain, or improve buildings.

CHAPTER 2

Determinants of Homeowner Spending

SUMMARY

- **Home improvement spending is highly concentrated, with just 9% of owners each year responsible for over half of all expenditures.**
- **Spending on discretionary projects is primarily driven by the characteristics of the homeowner, while spending on replacements is more related to the age and size of the home.**
- **In addition to moves, changes in household composition are the most important triggers of home improvement spending.**
- **Longer-term owners gradually shift the focus of their spending from discretionary to replacement projects.**

Over 25 million single-family owners upgrade a major system, add rooms, or otherwise improve the interior space of their homes each year. In contrast to repairs, which are often done out of necessity to keep the house operating properly, these replacements and other home improvements may be done because owners want to upgrade their living conditions.

But what prompts homeowners to make these decisions? Our research reveals that there are three general categories of spending determinants:

- *economic status* (as measured by household income),
- *demographic characteristics* (age of the household head and composition of the household), and
- *features of the home* (including age, size, value, structure type, and location).

Of these determinants, income has the greatest influence. Without sufficient income, owners cannot act on their desires to make major home improvements. In addition, those with higher incomes tend to live in larger, more expensive homes—which have greater maintenance, repair, and replacement requirements.

Age of household head, like home size and value, is also strongly associated with income because household earnings peak in middle age. But beyond these income-related reasons, spending declines among older owners because their family composition is stable and they have already completed major improvements to their homes. Family composition is important because homeowners with younger children face more changes in space requirements than either childless couples or people living alone.

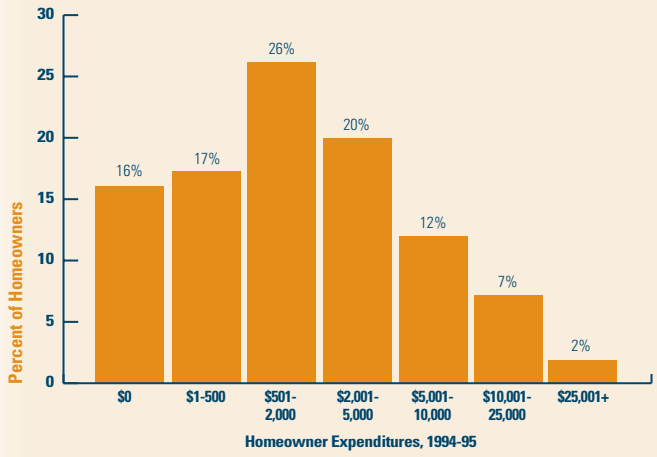
The age of homes exerts a powerful influence on spending levels for obvious reasons. Newer homes require less remodeling because they are built to contemporary tastes, use current technologies, and have systems that are not yet depreciated. As homes age, they become increasingly outdated in terms of styling and features.

Changes in these factors over time are also important predictors. For example, younger married couples with growing families undertake more home improvement projects than other types of households. In addition, homeowners spend about $2,000 more on improvements within the first two years of moving into a new home than they do in subsequent years.

Home improvement decisions also involve investment considerations. Making changes to

Figure 2.1

Most Owners Spend Modestly On Home Improvements and Repairs



Source: Joint Center tabulations of the 1995 American Housing Survey.

American Housing Survey indicates that 17% of homeowners spent less than $500, while nearly the same percentage spent nothing (Figure 2.1).

At the same time, though, 9% of owners put more than $10,000 into home improvements and repairs. These homeowners were responsible for more than half of all home improvement spending (Figure 2.2). The top 2% of spenders—those spending $25,000 or more—contributed fully one-quarter of the total.

Analysis of an AHS panel of owners that remained in their homes for more than a decade confirms that this same concentration of spending exists over time as well. Among those who stayed in their homes continuously between 1984 and 1995, the top 10% of spenders (who spent an average of over $60,000 on

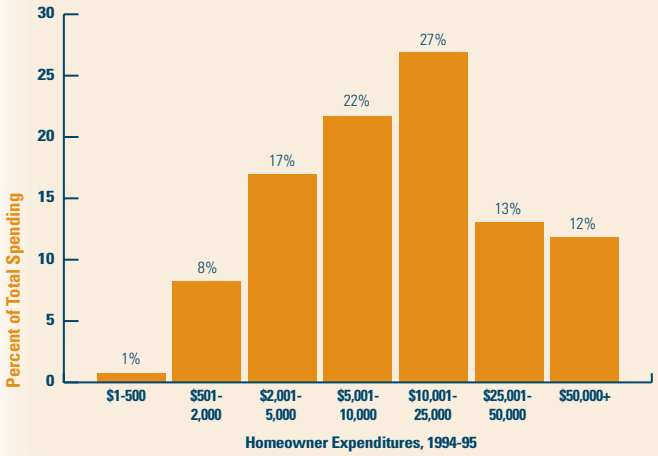
improve operating efficiency—for instance, by adding energy-saving devices—depends on the payback period and therefore on how long the household expects to occupy the home. Some owners decide to remodel because they fear an outdated kitchen or bath may hinder the sale of their home. Others remodel because they believe the improvement will raise the value of their homes by more than the cost. Finally, the cost and availability of credit influences the decisions of the roughly one-third of owners that finance their improvements.

Remodeling Activity Is Concentrated

Improvements and repairs are ongoing activities for most homeowners, with more than four out of five reporting at least some expenditures in any given year. Even so, many owners spend only a modest amount on home projects. Over the two-year period 1994-95, the

Figure 2.2

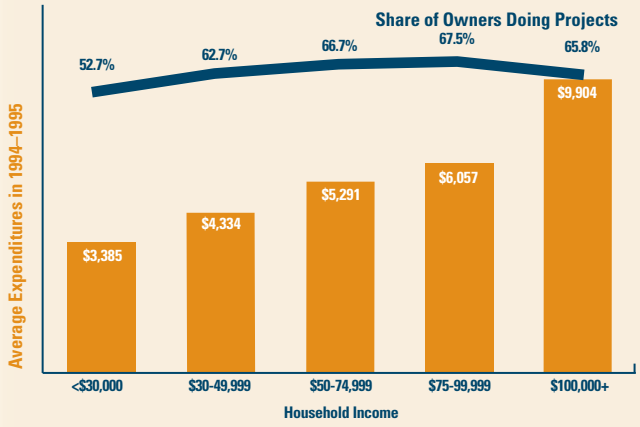
Homeowners Spending Over $10,000 Account for More Than Half of Total Spending



Source: Joint Center tabulations of the 1995 American Housing Survey.

Figure 2.3

Homeowner Improvement Activity Rises With Income...



Source: Joint Center tabulations of the 1995 American Housing Survey.

improvements over this period) accounted for 40% of the total. The bottom 10% of spenders (who spent an average of $300 over this period) accounted for less than 1% of total expenditures.

Income and Demographic Characteristics of Spenders

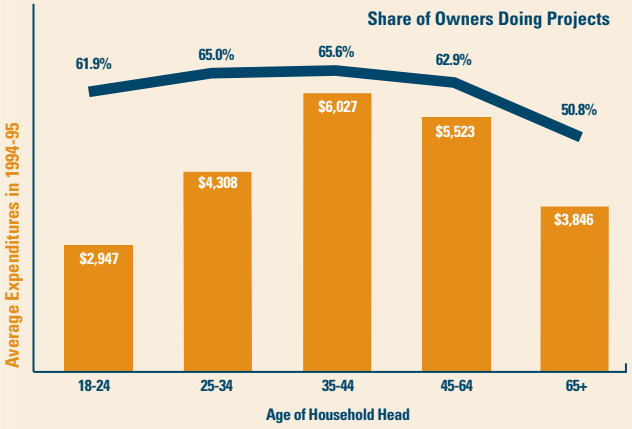
The biggest home improvement spenders share certain income and demographic characteristics. Expenditures on home improvements and repairs generally rise with income (Figure 2.3). Owners with incomes of $100,000 and over have significantly higher average expenditures than other households. Although these upper-income households represent only 11% of all homeowners, they make nearly a quarter of all remodeling expenditures. In addition, upper-income owners devote a larger share of their home improvement budgets to discretionary projects—such as room additions, kitchen and bath remodels, and other interior alterations—rather than to replacements of key systems.

It is likely that these high-income households also hold considerable assets. Surveys containing extensive data on remodeling do not collect detailed asset or wealth information. Assets are fundamental drivers of residential remodeling behavior because they can be drawn down or borrowed against to pay for projects. For purposes of this analysis, however, income is assumed to be a rough proxy for wealth.

Household incomes tend to be highest among 45 to 64 year-olds, during the maximum earning years and before significant numbers of workers retire. While home improvement spending for this age group is quite high, owners in early middle age (35 to 44 years old) are in fact the most likely to make improvements and to spend more

Figure 2.4

...And Peaks At Early Middle Age



Source: Joint Center tabulations of the 1995 American Housing Survey.

on the projects they undertake (Figure 2.4). This is the time of life when families are typically growing and therefore require additional living space. A disproportionate share of projects undertaken by owners in this age group is thus oriented toward expanding the amount of usable space in the home.

Homeowners aged 65 and older, in contrast, are the least likely to spend on home improvements—particularly those involving the addition or restructuring of space. Older owners have the lowest household incomes and, because their household composition is generally stable, they have less need to alter the configuration of their homes. The typical homeowner over 64 spends half as much on improvements as the typical homeowner between the ages of 35 and 44. Nevertheless, elderly homeowners are nearly twice as likely as younger owners to undertake replacement projects or other activities related to upkeep or structural maintenance, often because they live in older homes.

As people age, they generally follow a fairly predictable pattern of household formation and change—first living alone or with roommates, then marrying, having children, living as empty-nesters, and ultimately living alone again. It is unsurprising, then, that the age and household characteristics of high-spending owners are closely related. Married couples with children, concentrated in the early middle-age group, are the biggest spenders. During 1994-95, over two-thirds of these households performed a home improvement, compared with only half of single homeowners.

Especially as their children are growing up and need more individual space, these family households may opt to make home improvements as an alternative to moving to another house. Even when compared with households of similar age, income, and housing characteristics, married couples with children lead the pack in both the probability of performing a home improvement and the amount of the expenditure.

While household composition plays a major role in determining home improvement activity, changes in composition play an even larger role. The birth of a child or the addition of some other new member to the household, such as a nanny or a parent, are common motivations for home improvements. In 1994-95, 24.6% of married couples aged 25-34 who had a new child added or altered a room in their homes. By comparison, only 16.7% of same-aged childless couples that experienced no change in family size undertook a remodeling project of this type.

But any change—including departure of a household member—tends to stimulate remodeling activity (Figure 2.5). For instance, parents may convert a

Figure 2.5

Recent Changes in Household Composition Often Spark Improvement Spending

Change Within Past Two Years	Share Reporting Improvement (%)	Average Expenditure 1994-95 ($)
Added Person(s)	67.8	5,460
Added Child	76.0	5,310
Person(s) Left	64.1	4,780
No Change	60.9	4,730

Source: Table A.4.

bedroom to a home office once their child leaves for college. While growing households are more likely than shrinking households to make home improvements, shrinking households are more likely to make them than households that experience no change in composition.

Contribution of Structural Characteristics

The characteristics of the structure itself are also important factors in the decision to make home improvements. According to research by the National Association of Home Builders (NAHB), many of the major components of a home—such as the roof, windows, and plumbing fixtures—have a useful life of 20-35 years. As a result, replacements increase with the age of the home until the structure is between 15 and 35 years old, but then level off (Figure 2.6). The relationship between age and replacement demands for homes that are over 30 years old, however, is less predictable. The longevity of components depends on the durability of previously installed products, the timing of their installation, and the conditions of their use.

In addition, the size of the home is a factor. The larger the home, the more there is to maintain or improve. For example, given the same income, demographic and housing characteristics, owners of eight-room houses who made improvements in 1994-95 spent an average of 6.5% more than owners of seven-room houses.

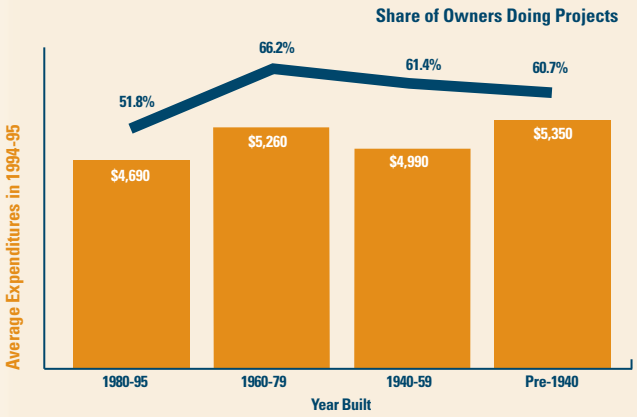
Structure size is linked to house value. Although homes of higher value are associated with higher improvement expenditures, this relationship is much less clear when controlling for household income, number of rooms, unit age, and other characteristics. Higher home values, independent of these other characteristics, may reflect a number of conditions such as the value of home improvements recently performed, local area market conditions, or other amenities.

Changes in house value clearly drive remodeling activity as well. Examining macroeconomic factors, economists at the National Association of Home Builders (NAHB) found that house price appreciation is closely associated with spending levels. Owners of units that are rising in price apparently feel more confident that investments in improvements will pay off. The appreciation of neighboring units reinforces this confidence. Owners of appreciating homes also have more home equity on which to draw to finance their improvement projects.

Structure type is yet another important driver of

Figure 2.6

Owners of Newer Homes Spend The Least on Improvements



Source: Joint Center tabulations of the 1995 American Housing Survey.

remodeling. Single-family detached homes—which are typically of higher value and occupied by higher-income households than other structure types—are the most likely to receive improvements. These homes tend to be larger, both in terms of number of rooms and square footage, and situated on larger lots that allow expansion of the structure. Owners of detached homes also have more freedom to make decisions about renovations than do owners of multi-family or attached units.

Owners of manufactured housing are the least likely to perform improvements and, when they do, to spend the least amount. This finding is consistent with the demographic characteristics of manufactured-home owners, who tend to have lower incomes and are either quite young or quite old. It is also consistent with the smaller size and lower value of these units. Nevertheless, total improvement spending as a share of home value is considerably higher for owners of manufactured homes than for owners of any other structure type, including single-family detached homes. While spending relatively little on kitchen and bath improvements, owners of manufactured homes are quite active in building additions and performing replacements. Moreover, they far outstrip other owners in making exterior improvements such as decks or garages, with over 20% performing these projects in 1994-95.

The available data make it difficult to measure spending on home improvements by condominium owners, because respondents generally do not know what share of their condo fees go toward remodeling. Analysis of interior improvements such as kitchen and bath remodels does, however, show that condo owners perform these activities at similar or somewhat lower rates than owners of detached units, but they spend substantially less. This is particularly true for bath improvements, for which condo owners spend less than half the amount of owners of detached units.

Regional Spending Differences

According to Commerce Department remodeling surveys between 1991 and 1995, households living in the Northeast spent more to improve and repair their homes than did residents of other parts of the country. Average expenditures on improvements and repairs in the region stood 10% above spending levels in the West, 17% above those in the Midwest, and 45% above those in the South.

Although climate is often cited as the main reason for this discrepancy, geographical differences in household and housing stock characteristics are even more decisive factors. In particular, the incomes of owners in the Northeast are significantly higher than those in other regions. The housing stock is also much older, especially relative to that in the South and West. Moreover, the Northeast (along with the Midwest) has the highest proportion of owner households made up of married couples with children—the household type that spends most on improvements and repairs.

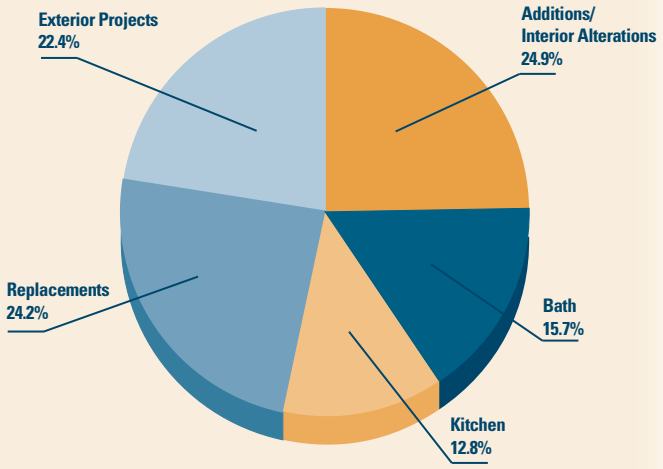
After adjusting for these demographic and housing stock considerations, spending for home improvements and repairs is quite comparable across the four regions. This means that the characteristics of homeowners and the characteristics of the houses they occupy—rather than location per se—account for most regional differences in home improvement spending.

The Impact of Financing

A significant share of home improvements is at least partially financed. Borrowing to remodel allows owners to spread the costs of projects over

Figure 2.7

Recent Movers Generally Make Discretionary Improvements First



Share of Spending Within 24 Months of Move-in

Source: Joint Center tabulations of the 1995 American Housing Survey.

many years, enabling them to advance the timing of the improvements.

Information on the sources of funds for homeowner remodeling projects is limited. A recent survey conducted by the NAHB Research Center found that about two-thirds of owners who spent more than $1,000 on remodeling in 1996 paid for the improvement out of savings. The remaining third financed their projects with credit cards, home equity loans, lines of credit, or other funds. Of those households that financed improvements, about two in ten borrowed against their home equity and the rest financed their projects with credit cards or other sources.

Home equity borrowing clearly encourages homeowners to undertake more home improvements and to spend more on them. Unfortunately, the American Housing Survey reports only on second mortgages and not lines of credit, which account for the majority of home equity borrowing. Nonetheless, of the small fraction of owners that took out a second mortgage in 1994-95, fully 80% reported making home improvements. This holds even when accounting for the higher average incomes of those who take out second mortgages. Within the $50,000 to $75,000 income group, for example, 82% of those that took on a second mortgage remodeled, compared to just 66.1% of those without a second mortgage. Owners with a second mortgage also spent more than twice as much on projects ($9,900 versus $4,700) than other owners over this period.

The Behavior of Recent Movers

As participants in the remodeling industry have long been aware, for most homebuyers spending on improvements is highest shortly after the purchase of a home and drops off sharply after two years. In fact, our analysis of recent movers into homes that were at least 15 years old indicates that every home purchase generated an extra $2,000 in improvements on average, compared with the spending of households that did not move.

The surge in spending at the time of purchase occurs for several reasons. First, remodeling right away allows families to customize their homes to their particular needs and to enjoy these improvements for the entire time they live in the home. Second, for projects such as energy improvements that are intended to save money on household operations, the sooner the improvements are made, the more likely the homeowner is to recoup the costs. And third, making improvements at move-in helps to reduce the disruption that household members would experience if they waited to remodel after settling into the new home.

During the first few months after buying a new home, owners spend three to four times more per month on average than they do subsequently. Most of these initial expenditures, as well as others made throughout the first two years of ownership, are for projects aimed at accommodating the space needs and tastes of the new occupants.

For example, over 53% of improvements spending within the first two years goes for kitchen projects, bathroom projects, room additions, and other interior alterations. An additional 22% is for detached garages or improvements to the property rather than to the home itself. The most common replacements made during this period are HVAC, windows and doors, and roofing, which each account for about 5% of total spending by recent movers (Figure 2.7).

First-time buyers typically spend considerably less at move-in than do trade-up buyers—an average of $1,550 for first-time buyers during the first 24 months compared with $4,950 for households that previously owned a home. This disparity reflects the fact that first-time homeowners tend to have lower incomes than trade-up buyers and are more likely to need home furnishings. In addition, trade-up buyers may have built up some equity in their previous homes to help finance the improvements. Moreover, previous homeowners may have a better sense of the features that they are looking for in a home and are therefore more prepared to make improvements immediately.

Given that more work is done to homes at the time of turnover, it is not surprising that homes that change hands more often have more improvements made to them. During the 12 years from 1984 to 1995, expenditures by owners that remained in the same home throughout the period averaged $15,600, compared with $18,200 for homes that changed ownership. This spending pattern also reflects the fact that long-term owners generally are older and therefore less likely to make extensive improvements.

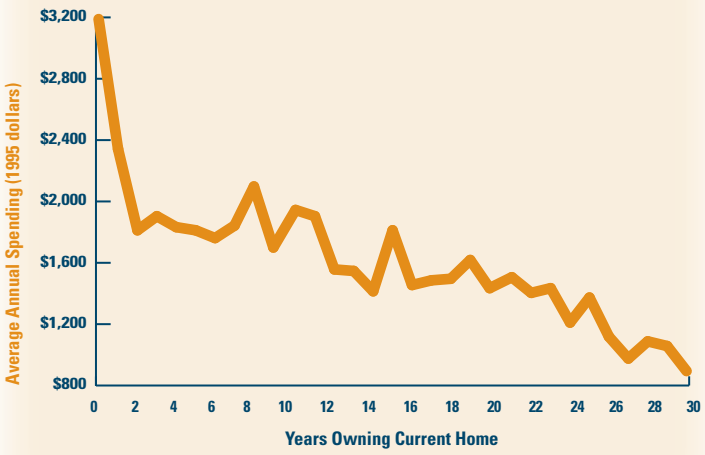
Spending Patterns Over the Longer Term

Although expenditures tend to decline after the first few years of ownership, they do show a brief surge after 8-10 years. The reasons for this second flurry of improvement activity are not entirely clear, but one explanation is that this is about the time when many owners decide to trade up. Those that don't move may remodel instead (Figure 2.8).

Owners who do not stay in their homes for a full 10 years begin to reduce their home improvement spending as they approach the moving date.

Figure 2.8

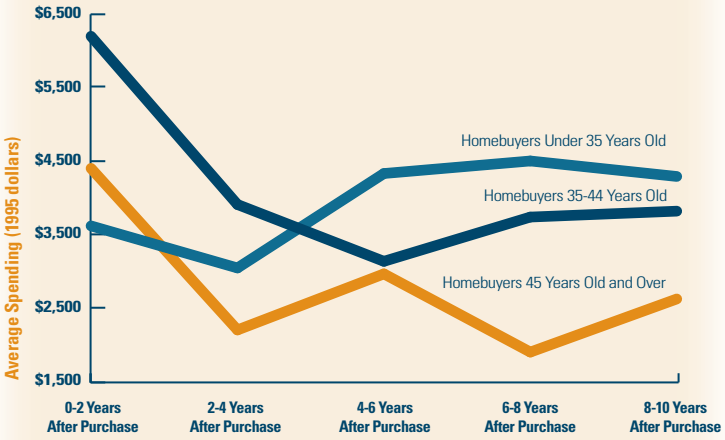
Improvements Spending Is Highest Right After Purchase



Source: Joint Center tabulations of the 1991, 1993, and 1995 American Housing Surveys.

Figure 2.9

Younger Homebuyers Often Defer Spending on Improvements



Source: Joint Center tabulations of the 1985-93 American Housing Surveys.

In the two-year period just before a move, homeowners in the American Housing Survey panel spent an average of 15% less than during the preceding two-year period. These estimates do not, however, capture last-minute spending to prepare a house for sale.

For longer-term owners, the focus of spending shifts over time from discretionary improvements to replacements. During the first 10 years of ownership, households devote almost twice as much of their home improvement budgets to discretionary changes—such as room additions, interior alterations, and kitchen and bath projects—than to replacement projects. By the end of 10 years, however, spending for discretionary projects and for replacements is just about the same. Then, by the third decade of ownership, expenditures for replacements substantially exceed expenditures for discretionary improvements.

Among owners who stayed for 10 years, most made at least one major discretionary improvement or replacement to their homes. On the improvement side, almost one in six longer-term owners completed one or more discretionary projects. By the end of ten years, over 9% had added one or more rooms, over 9% had undertaken a major ($5,000 or more) bathroom project, and almost 7% had undertaken a major ($10,000 or more) kitchen project.

On the replacement side, 26% of long-term homeowners reported having had replaced a roof. Another 18% had replaced major built-in equipment such as a furnace, hot-water heater, or air conditioning equipment. About one in seven households had replaced siding, and slightly more replaced exterior doors and windows during the first 10 years of ownership.

Age at purchase strongly influences spending patterns. Owners who bought before age 35 spend less on home improvements immediately after purchase than older home buyers (Figure 2.9). Expenditures by younger buyers then surge ahead of spending by older buyers in years five through ten. Spending patterns probably diverge so much by age because most younger buyers stretch their incomes and wealth to purchase their first homes. Older buyers, many of which have owned homes, are able to make improvements immediately because they have accumulated more wealth.

CHAPTER 3

The Do-It-Yourself Market

SUMMARY

- D-I-Y projects are concentrated in the higher-cost categories of interior improvements, such as adding a bath and remodeling a kitchen.
- Do-it-yourselfers are typically younger married couples with children at home.
- As owners age, they increasingly turn to professional contractors to make their home improvements.

Once homeowners make the decision to remodel, the next choice is who is going to do the work. Many take the do-it-yourself (D-I-Y) approach, not only buying the materials themselves but also providing all or most of the labor.

Industry estimates understate the magnitude of the D-I-Y market because they do not factor in the cost of homeowners' labor—which is about equal to the cost of materials in terms of overall economic activity.

Homeowners' decisions to do their own remodeling work have important implications for product manufacturers and suppliers as well as for contractors. In particular, do-it-yourselfers often purchase home improvement products through different distribution channels than professional remodelers.

Estimating the D-I-Y Share

The D-I-Y segment of the remodeling market is substantial. Supporting this segment are consumer-oriented home improvement centers as well as television programs and publications devoted to D-I-Y remodeling projects. In 1994-95, over half of all homeowners making improvements reported having undertaken at least one D-I-Y project. This level of activity has persisted despite the growth of two-earner households in the United States and the increased specialization of the workforce, trends that would seem to limit both the time and skills necessary to perform home improvements.

Although accounting for just over 40% of all home improvement projects, D-I-Y activities contribute a much smaller share of total remodeling expenditures (Figure 3.1). This discrepancy reflects the fact that D-I-Y spending estimates cover only material purchases.

A more realistic way to evaluate the size of the D-I-Y market is therefore to calculate its share of total material purchases for remodeling projects. According to surveys conducted by the National Association of Home Builders, materials account for about 40% of the cost of a professionally managed remodeling project, with the balance for labor, overhead, profit, and related costs. Using this rule of thumb, the $132.8 billion in spending for professionally installed projects in 1994-95 generated just over $53 billion in sales of home improvement products. Given that D-I-Y spending for materials was $40 billion during this period, the do-it-yourself market was responsible for just over 40% of total annual purchases of products used in remodeling projects.

Popular Do-It-Yourself Projects

It is reasonable to expect that projects performed by do-it-yourselfers would be relatively modest

Figure 3.1

The D-I-Y Remodeling Market Was Nearly $20 Billion Annually in 1994–95

	Number of Households Doing Projects (Millions)	Number of Projects (Millions)	Total Expenditures in 1994-95 (Billions of $)	Estimated Materials Expenditures (Billions of $)
All Improvements	33.8	86.6	172.4	92.7
D-I-Y	17.6	36.8	39.6	39.6
Contractor	24.0	49.8	132.8	53.1

Note: Categories do not add to total because some owners report projects in both categories.
Source: Joint Center tabulations of the 1995 American Housing Survey.

undertakings compared with those performed by contractors. After all, the typical D-I-Y homeowner has less experience in remodeling, fewer specialized skills, and less time to undertake a complex project. Nevertheless, it turns out that D-I-Y projects are essentially as ambitious as professional projects in terms of both level of spending and scale of effort.

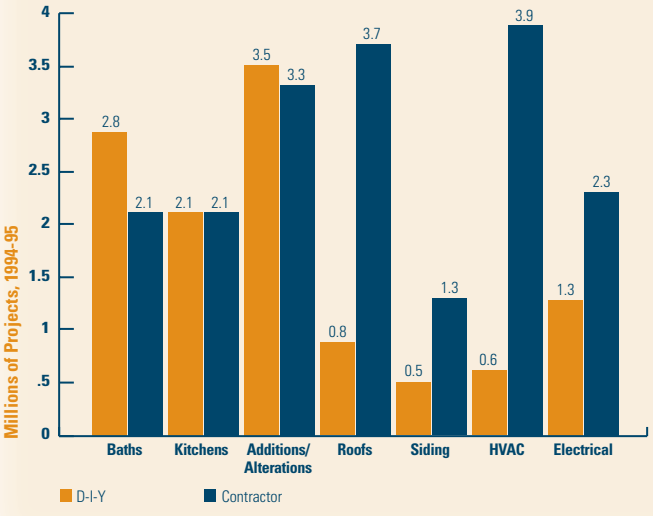
One reason why the effective value of do-it-yourself projects is comparable to that of professional jobs is because D-I-Y projects are concentrated in the higher-cost categories that add to or enhance the interior space of the home (Figure 3.2). In fact, the number of D-I-Y bathroom projects reported in 1994-95 surpassed the number of professionally installed bathroom improvements. Moreover, the numbers of D-I-Y kitchen projects, along with additions and alterations to other rooms, were about equal to those performed by contractors.

In contrast, homeowners are much less inclined to undertake replacement projects themselves. The ratio of professional contractor projects to D-I-Y projects in the replacement category generally runs at least two to one, reaching over six to one for projects involving heating and central air conditioning systems.

There are at least two explanations for this pattern. One of the primary reasons is safety—reroofing a house or installing a new electrical system can be risky for the untrained do-it-yourselfer. Another is the low potential savings for homeowners who do the job themselves. For some projects such as the installation of a water heater or furnace, the cost of the systems is a large share of the total cost of the project. Subcontractors specializing in these projects can usually purchase products from wholesalers and distributors

Figure 3.2

Do-It-Yourself Improvements Focus Primarily on Home Interiors



Source: Table A.3.

that don't market to homeowners. Even contractors purchasing products at retail outlets typically receive professional discounts, thus eliminating some of the cost advantages to D-I-Y homeowners.

Younger Families Dominate

Homeowners that perform D-I-Y projects are significantly younger than those that hire contractors (as well as those who don't undertake home projects at all). In 1994-95, more than one in five do-it-yourselfers were under age 35, while more than half were under age 45. By comparison, less than 10% of owners who hired a contractor to make improvements were below age 35 and less than a third were below age 45 (Figure 3.3).

Homeowners age 65 and older remain active in the improvements and repairs market—particularly for replacement projects—but are highly unlikely to do the projects themselves. Less than 12% of D-I-Y households are in this older age group, compared with over one-quarter of all homeowners and almost one-third of owners that hire professional remodeling contractors to do the work.

Figure 3.3

Do-It-Yourselfers Are Relatively Young

Percentage of Homeowners by Age of Head

	18-34 Years	35-44 Years	45-64 Years	65+ Years	All Ages
D-I-Y Homeowners	21.7	30.1	36.3	11.9	100
Homeowners Hiring Contractors	8.6	20.1	39.9	31.4	100
All Homeowners	14.1	23.6	37.0	25.3	100

Source: Joint Center tabulations of the 1995 American Housing Survey.

Not only are D-I-Y homeowners younger and thus more able to perform physically demanding tasks, but they are also much more likely to be married couples with minor children at home. More than 40% of do-it-yourselfers fall within this household type, compared with less than 25% of homeowners that hire contractors. The fact that such a high proportion of the do-it-yourselfer population is young with growing families helps to explain why their home projects are heavily concentrated in improvements to interior space.

The growing population of people who live alone, in contrast, makes up only a small share of do-it-yourself households. Instead, these single-person households—many of whom are elderly—are particularly likely to hire professional contractors.

While many homeowners undertake D-I-Y projects to save on costs, they do not necessarily have low incomes. The 1995 median income of D-I-Y homeowners was over $48,000—slightly above the $46,000 median income of owners that hired contractors. In large part, this reflects the fact that the households most likely to hire professionals are elderly and are therefore likely to report lower incomes. Among the non-elderly, the median income of owners that hired contractors was $54,000, above the $51,000 median income of non-elderly D-I-Y owners, as well as the $46,000 median income of owners that made no home improvements at all.

Recent Changes in D-I-Y Share

Although the share of do-it-yourself projects in the overall home improvement market is currently large, it is shrinking. In 1985, a household

Figure 3.4

The D-I-Y Share of Improvements Has Declined Across the Board

Home Improvements	D-I-Y Share (%) 1985	1993	Percent Change 1985-93
ALL TYPES	42.7	37.7	-5.0
Additions	53.9	42.8	-11.1
Kitchens	53.4	51.1	-2.3
Baths	60.3	56.6	-3.7
Siding	36.8	29.9	-6.9
Roofing	27.4	24.5	-2.9
Windows/Doors	48.0	45.6	-2.4
Insulation	54.8	54.1	-0.7
Major Equipment*	22.4	17.5	-4.9

*Includes furnaces, central air conditioning and other types of equipment.
Source: Joint Center tabulations of the 1985 and 1993 American Housing Surveys.

member did all or most of the work in almost 43% of home improvements. By 1993, the D-I-Y share was under 38%. (The home improvement categories in the AHS were revised in 1995, making direct comparisons with earlier years impossible.) This decline is not limited to just a few project categories. Indeed, the decline in traditionally popular D-I-Y projects—kitchen, bath and room additions and interior alterations—has been just as great as that in the replacement project categories (Figure 3.4).

Part of this trend away from D-I-Y activities simply stems from the aging of the population. The share of homeowners in their 20s and 30s (the age group most likely to do improvements themselves) has fallen over the past decade. Meanwhile, the share of owners in their 40s and 50s (a group likely to hire contractors to make improvements) is on the rise.

As households age, the likelihood of doing home improvements themselves diminishes. As a result, rates of D-I-Y activity in the mid-1990s are on average 3-5% below those in the mid-1980s. The decline in D-I-Y shares holds for households of all ages and types.

Adding to the downward pressure is growth of the buy-it-yourself (B-I-Y) market. Some homeowners are discovering that they can make key style decisions and retain control of material costs by purchasing the home improvement products themselves and hiring a contractor to install them. Particularly for products available at discount home centers, the cost to the consumer may not be that different from the cost to the contractor.

The growth of installed sales programs at home centers and retail lumber yards has also stimulated increases in B-I-Y activity. According to US Commerce Department figures, consumer purchases of home improvement products for professional installation increased from 3.4% of total market spending in 1985 to 4.5% in 1995. The increases in B-I-Y activity have offset some of the decline in D-I-Y spending, thereby masking the ongoing shift toward professional contractors.

CHAPTER 4

Professional Remodeling Contractors

SUMMARY

- **Of the 800,000 remodeling establishments nationwide, fully 70% are self-employed individuals and just 30% are businesses with payrolls.**
- **Most remodeling firms are small, with more than three-quarters reporting less than $250,000 in receipts in 1992.**
- **Ease of entry into the remodeling contractor industry makes consolidation difficult and keeps both startup and failure rates high.**
- **Older, larger remodeling companies typically target the higher end of the market.**

Professional contractors already perform half of all home improvements and receive over three-quarters of all remodeling dollars. Nevertheless, the industry remains highly fragmented. Indeed, the ease of entry into the business and the difficulty of managing an extensive field labor force are both strong deterrents to consolidation.

Special tabulations of the Census of Construction Industries reveal that about 200,000 payroll establishments and 500,000 self-employed individuals performed residential improvements and repairs in 1992. By 1998, the total number of establishments and self-employed contractors probably approached 800,000. With market conditions generally improving for remodelers since 1992, the share of businesses with payrolls is also likely to have increased.

Of the 200,000 payroll establishments that performed remodeling services in 1992, about 60% (or 117,000) derived at least half their revenue from remodeling. The following analysis focuses on these remodeling specialists who form the core of the industry (Figure 4.1). In keeping with the high degree of industry fragmentation, however, these companies account for only three-quarters of total remodeling receipts reported by payroll establishments.

General vs. Specialty Trade Contractors

Construction companies that specialized in remodeling reported 1992 receipts of $32.2 billion. About 55% of these establishments provided special trade services, while the balance provided general contracting services. Special trade contractors focus on single-trade jobs such as plumbing, painting, siding replacement, or electrical work. General contractors, in contrast, perform jobs that require a combination of plumbing, electrical, carpentry, and other trades, such as room additions and kitchen or bath renovations.

Most general contractors specializing in remodeling subcontract a significant share of their construction work—about one-quarter of gross receipts on average—to single-trade contractors. Single-trade contractors, on the other hand, seldom subcontract work to general contractors. On a net basis (total revenues less work subcontracted), single-trade contractors in the remodeling industry account for just over half of construction receipts and half of the materials, components, and supplies.

Remodeling establishments also specialize by project type. In 1992, about 60% of remodeling contractors derived a majority of their revenues from additions and alterations, while the other

Figure 4.1

Nearly 120,000 Establishments Specialize in Remodeling

Activity Generating More than 50% of Receipts	Number of Establishments	Total Receipts ($ Millions)	Cost of Materials, Supplies ($ Millions)	Number of Employees in 1992:Q3
Residential General Contracting Total	52,694	16,845	5,206	143,511
Additions & Alterations	42,384	14,348	4,419	115,011
Maintenance & Repair	10,310	2,497	787	28,500
Single-Trade Contracting Total	64,692	15,331	5,392	190,364
Additions & Alterations	27,299	7,614	2,808	85,045
Maintenance & Repair	37,393	7,717	2,584	105,319
TOTAL	117,385	32,176	10,598	333,875

Note: General Contractors comprised of SIC 1521 general contractors—single family, SIC 1522 general contractors—multifamily, and SIC operative builders, single-trade contractors comprised of SIC 17 single-trade contractors reporting 50% or more receipts in residential activity.
Source: Joint Center tabulations of the 1992 Census of Construction Industries.

40% derived a majority of their revenues from maintenance and repairs.

Remodeling general contractors are far more likely to specialize in additions and alterations, and single-trade contractors are more likely to specialize in maintenance and repair. Some 80% of general contractors focus on additions and alterations, compared with only 42% of single-trade contractors (Table A.5).

Dominance of Small Businesses

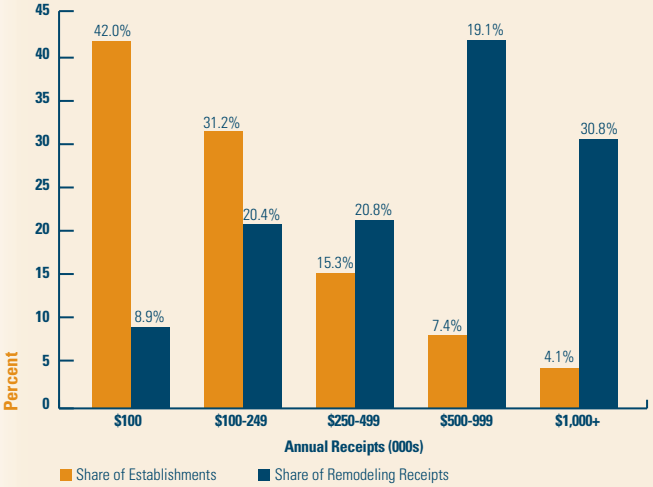
Small businesses are the norm in the residential remodeling industry, with nearly four in ten reporting revenues of less than $100,000 and seven in ten reporting revenues of less than $250,000 (Figure 4.2). Although they accounted for 73% of establishments, these smaller firms accounted for only 29% of construction receipts net of work subcontracted to others. In addition to these payroll establishments, most of the half-million self-employed individuals doing remodeling are likely to have receipts of less than $100,000 as well.

At the other extreme, 4% of establishments reported receipts of more than $1 million in 1992. Although representing less than 1 in 20 residential remodeling establishments, these large companies accounted for nearly one-third of net construction receipts. Moreover, they contributed one dollar out of every four dollars of total materials spending in 1992.

Few giants have emerged in the remodeling industry. When estimated on a firm rather than an establishment basis (a firm can own multiple establishments), the top 100 remodeling

Figure 4.2

Small Establishments Dominate the Industry, But Capture Only a Modest Share of Receipts



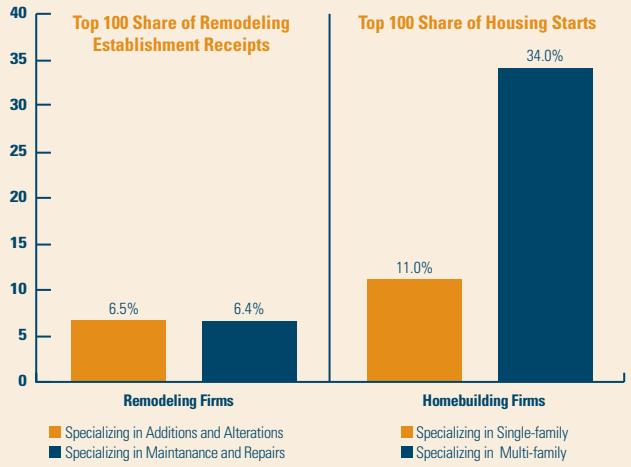
Note: Excludes single-trade contractors with less than 50% of revenues from residential construction.
Source: Joint Center tabulations of the 1992 Census of Construction Industries.

companies nationally contributed just 6.5% of remodeling establishment receipts in 1992, down from 7.1% in 1987. By comparison, the top 100 home builders in 1992 accounted for 11% of single-family starts and 34% of multi-family starts (Figure 4.3).

One reason why there are so many small firms in the remodeling industry is that entering the business is relatively easy, requiring little capital and no formal training. Indeed, as of 1996, 14 states had no licensing or registration requirements for remodeling contractors (other than electricians and plumbers). Another 16 states did not require examinations for licensure. Even in states with stringent laws, unlicensed and self-employed contractors (who are difficult to identify and regulate) undoubtedly do at least some remodeling work.

Figure 4.3

Few Giants Have Emerged in the Remodeling Industry



Sources: Joint Center tabulations of the 1992 Census of Construction Industries, and Professional Builder Magazine.

Formation and Failure Rates

With so few barriers to entry, business formations in the residential remodeling industry are common. According to Joint Center tabulations of 1992 construction census data, 30% of general contractors specializing in residential additions and alterations were less than two years old; 30% were between two and four years old; and only 20% were ten years old or older. Comparable shares for single-trade contractors specializing in maintenance and repair are 29%, 26%, and 29%.

As in the retail and services industries, however, ease of entry is associated with high failure rates. Of the roughly 97,000 contractors that specialized in remodeling in 1987, 53% had failed by 1992 (Figure 4.4). Failure rates for single-trade contractors are slightly lower than those for general contractors. Failure rates are even higher for start-ups. Although detailed estimates for remodeling contractors are unavailable from government sources, a recent study of the Census of Construction Industries puts five-year failure rates for all construction startups at 64%.

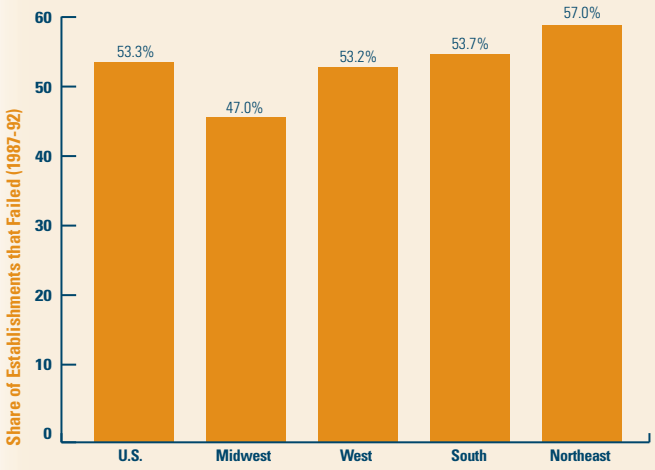
Although firms come and go, the number of remodeling specialists has increased significantly. With the surge in remodeling spending in the 1980s, the number of general contractors specializing in additions and alterations climbed from about 22,600 in 1982 to 42,400 in 1992. In the five years between 1987 and 1992, the number of single-trade contractors specializing in additions and alterations rose from 20,000 to 27,300—a gain of 37%. Despite the growth in the number of contractors during this period, however, the size distribution of remodeling establishments shows little change.

Market Segmentation

The remodeling market is segmented between customers for whom price is the primary consideration

Figure 4.4

Five-Year Failure Rates in the Industry Are High



Source: Joint Center analysis of the 1987 Census of Construction Industries and the 1987 and 1992 Standard Statistical Establishment Lists.

and those for whom the contractor's reputation, service, and professionalism are at least as important. Larger remodeling companies generally target higher-value jobs and higher-income customers to cover the costs of attracting and retaining skilled workers (Figure 4.5).

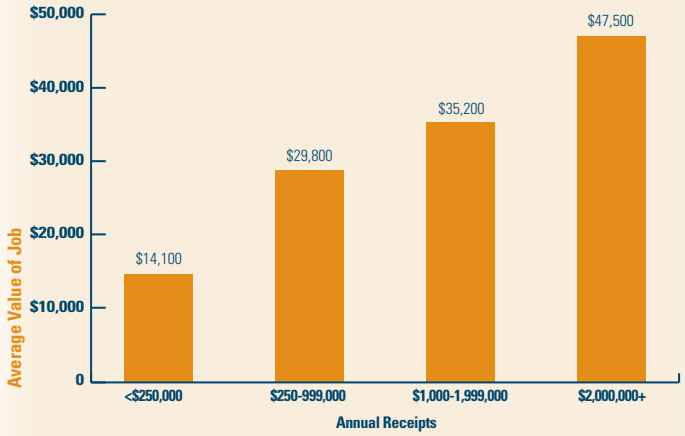
On the replacement side, however, consumers tend to favor the most efficient providers. When it comes to small maintenance and repair projects, many homeowners rely on smaller companies or self-employed contractors. This, however, is beginning to change. Responding to consumer demand for repair work backed by larger, well-established companies, even if they have to pay higher prices, several larger general contractors have begun to offer handyman services.

Business Operations and Practices

Apart from expanded used of technology and increased specialization, business operations within the remodeling industry have not changed dramatically over the past 20 years. Practices do, however, vary by size and type of contractor. For example, larger general contractors subcontract out more work than smaller general contractors. In 1992, general contractors specializing in residential additions and alterations with receipts of $500,000 or more subcontracted about 30% of the value of their work, while those with receipts under $250,000 subcontracted only 17%. Single-trade contractors subcontract less than general contractors regardless of establishment size: even those with receipts over $1 million subcontract just 12% of their work.

Figure 4.5

Larger Firms Specialize in High-End Projects



Source: Hanley-Wood Remodeling Magazine Reader Survey, 1997.

Materials purchased as a proportion of total receipts also vary by size and type of contractor. Smaller contractor establishments specializing in additions and alterations (under $250,000 in receipts) spend nearly 40% of revenues on materials. By comparison, larger establishments specializing in maintenance and repair services (over $500,000 in receipts) spend about 30%.

Contractors themselves differ in terms of their age and education. Although not based on a nationally representative sample, a 1997 survey conducted by *Remodeling* magazine provides the most recent profile of general contractors that specialize in residential remodeling. This group comprises relatively well-educated baby boomers: fully 70% of respondents are between the ages of 35 and 54, with about 80% having some college education, 44% holding at least a college degree. A study conducted 10 years earlier by the National Association of Home Builders found similar results; the median age of the principals was slightly lower, however, as were the shares with at least some college (75%) and a college degree (42%).

Although many principals in the firms surveyed by *Remodeling* magazine came from the construction trades (42%), the share was smaller (28%) among firms with over $1 million in revenue. In these larger companies, the principals are more likely to have a background in business or construction management.

In addition, principals at larger remodeling companies are far more likely to use office technology than those at smaller companies. Nearly all the large companies used computers for word processing and accounting; 70% used computers for estimating while 80% used them for job costing and payroll. Even at small establishments, two-thirds used computers for word processing; half used them for accounting, four-tenths for estimating, one-third for job costing, and one-fifth for payroll. Note that just 10 years ago, computerization of any of these functions was relatively rare.

An emerging trend in the business operations of contractors is the provision of credit to customers. Although some large retailers of home improvement products have long offered financing for major replacement projects like windows and siding, contractors are now starting to arrange financing for their customers as well. Still, only about 30% of larger companies and 10% of smaller firms help their customers obtain credit for home improvement projects. With the financial services industry now promoting home equity and home improvement loans, though, this could soon change.

Reaffirming the results of several industry studies, a survey conducted by the National Association of Home Builders at the 1996 Remodelers' Show found that remodeling contractors depend largely on referrals and repeat customers for business. Regardless of size, nearly 90% of those surveyed reported customer referrals as an important source of leads, while two-thirds reported repeat customers as an important source. Surveys dating back as far as 1982 produced similar results .

While the available evidence thus suggests that contractors' business practices have not changed substantially in recent decades, the structure of the residential remodeling industry may now be shifting toward consolidation. The implications of recent trends for both consumers and contractors are discussed in detail in the outlook section of this report.

CHAPTER 5

Remodeling of the Rental Stock

SUMMARY

- **Rental property owners account for nearly a quarter of improvements and repairs expenditures.**
- **Improvements spending is lower for rental units than for owner-occupied units because they are smaller and more difficult to alter.**
- **The timing of rental remodeling expenditures over the business cycle differs from that of homeowner expenditures.**
- **More than half of the rental stock consists of single-family structures or small multifamily buildings.**

In 1995, rental, vacant, and seasonal units made up about 39% of the housing stock and accounted for about 23% of remodeling expenditures. Although rental spending is therefore lower than homeowner spending on a per unit basis, it is nonetheless comparable on a value basis: the average value of an owner-occupied unit is about 70% greater than that of a rental unit. Lower per unit spending for rental properties is therefore primarily due to their smaller size and lower value. Indeed, higher average age and more rapid turnover make rental units costly to maintain relative to the owner-occupied stock.

Like homeowner remodeling, rental remodeling depends on the individual decisions of millions of property owners. Of the nearly 26 million rental units with ownership information in the 1995 Property Owners and Managers Survey (POMS)—a survey done in conjunction with the American Housing Survey—about 65% were owned by individuals or married couples, with the rest owned by partnerships, corporations, and other institutional investors. In fact, individuals owning fewer than 10 units are responsible for the improvements and repairs of more than 40% of the rental stock.

Motivations for Remodeling

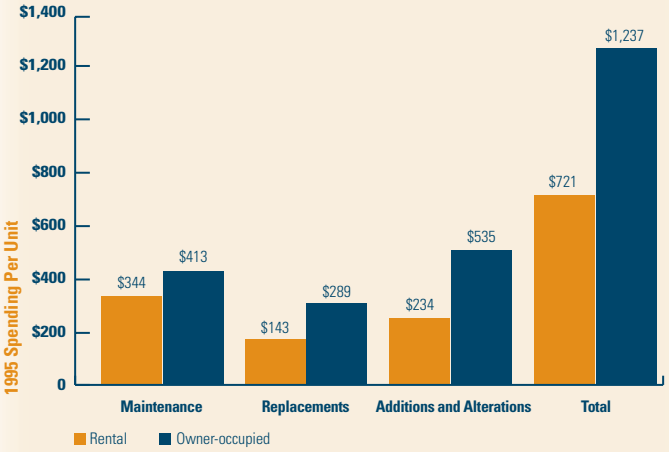
The factors that motivate rental property owners to remodel their units differ from those of homeowners. Homeowners both invest in and are consumers of their housing. As a result, they remodel their homes to benefit from the improvements as well as to protect and enhance their investment. Rental property owners, in contrast, remodel their units primarily to maximize their economic return and secondarily to protect their investment. Although landlords who own one or a few rentals may behave more like homeowners, even they tend to be more profit-oriented than use-oriented in their remodeling behavior.

While homeowners will make improvements that add less to their homes' value than they cost, landlords will generally refrain from making improvements that do not allow them to break even. Property owners may also take longer to replace worn-out systems than homeowners in an effort to earn a higher return.

The lower moving costs associated with renting also contribute to differences in the remodeling behavior of landlords and homeowners. To avoid the high cost of selling and buying homes, many homeowners remodel rather than move as a way to meet their changing housing needs. Renters, on the other hand, generally move when their housing

Figure 5.1

Rental Property Owners Spend Proportionally Less on Improvements



Note: Rental figures include spending on vacant and seasonal properties.
Sources: 1995 U.S. Department of Commerce C-50 Report, and 1995 American Housing Survey.

of rental remodeling than homeowner remodeling. In 1995, for example, per unit spending on maintenance and repairs for rentals plus seasonal and vacant units was 83% of the average amount spent by owner-occupants. For additions and alterations, rental expenditures per unit averaged only 44% of the amount spent by homeowners (Figure 5.1).

Differences in the Rental Stock

While the differences between rental and owner remodeling spending arise in part from the different motivations of landlords and homeowners, the characteristics of the units themselves also play a role. With a median size of 1,270 square feet, rental units are about 30% smaller than the more than 1,800 square feet

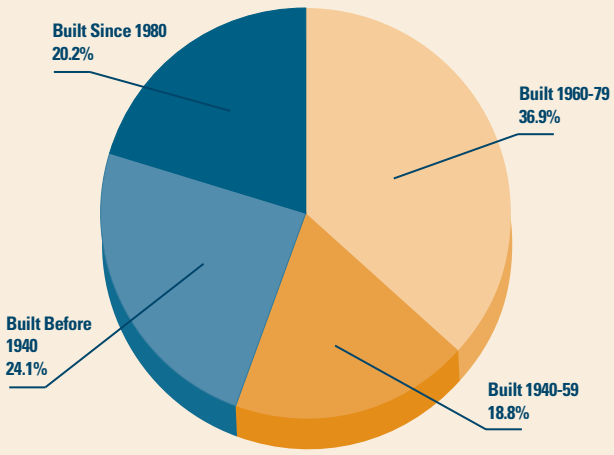
requirements change. As a result, landlords usually rent to tenants who want the units as configured, rather than alter the space in an effort to retain tenants. Some landlords do however, choose to make major improvements or alterations in response to changes in the composition of market demand. As the composition of demand shifts, pressures or opportunities emerge to remodel properties to appeal to a different market segment.

High turnover in the rental stock tends to drive down improvement spending and drive up maintenance and repair costs relative to owner-occupied units. Remodeling is triggered when rentals turn over, just as it is when homeowners buy and sell homes. The difference is that most of the spending on rentals is for repairs and occasionally for kitchen, bath, and system upgrades. New homebuyers, in contrast, spend relatively more on room additions and alterations.

For all of these reasons, spending on improvements accounts for a smaller share

Figure 5.2

The Rental Stock Is Relatively Old



Source: Joint Center tabulations of the 1995 American Housing Survey.

found in the typical owner-occupied home. In addition to less space, rental units have fewer of the rooms that are frequently the targets of remodeling projects. For example, rental units have smaller kitchens than owner-occupied homes, and less than 20% have two or more bathrooms. Less space and fewer bathrooms result in lower per unit remodeling requirements.

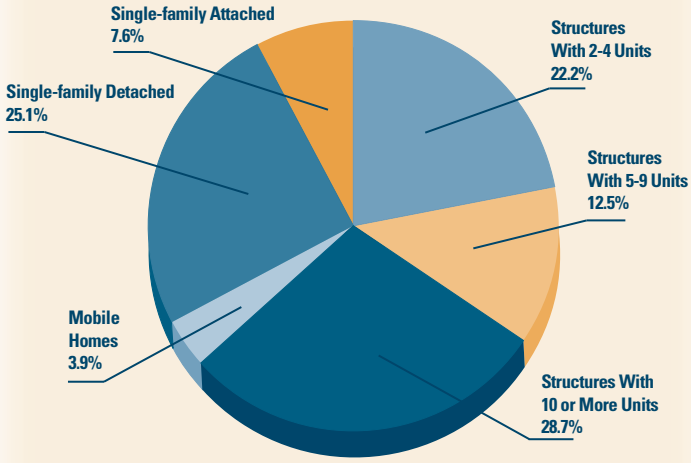
Rental units are also older on average than owner-occupied homes. In 1995, almost one in four rentals was at least 55 years old, compared with just over one in six owner-occupied units (Figure 5.2). Moreover, the rental stock is aging even more rapidly than the owner-occupied stock. In 1985, the median age of both owner-occupied and rental units was 23 years. By 1995, the median age of rental units had climbed to 30 years, while that of owner-occupied units had reached only 27 years. Older rental units typically require more maintenance than newer units because their systems (roofs, plumbing, electrical, HVAC) are more in need of maintenance or upgrading.

Another factor is the concentration of rentals in multi-family structures. Indeed, 35% of rental units are in properties with 2 to 9 units, nearly 20% are in properties with 10 to 49 units, and almost 10% are in properties with 50 or more units. Rentals in multi-unit properties are less likely than single-family detached units to have structural alterations such as room additions because of the difficulties of modifying the space.

It is noteworthy, however, that fully a third of the rental stock is made up of single-family attached, single-family detached, and mobile homes (Figure 5.3). This means that a large portion of the rental stock is structurally similar to owner-occupied housing and therefore has similar requirements for replacements of major systems. Nevertheless, even these rental units are likely to have fewer improvements made to them than comparable owner-occupied units because landlords have less incentive to adapt the stock to tenants' needs.

Figure 5.3

Single-family Homes Make Up a Third of the Rental Stock



Total= 34.2 Million Occupied Units

Source: Joint Center tabulations of the 1995 American Housing Survey.

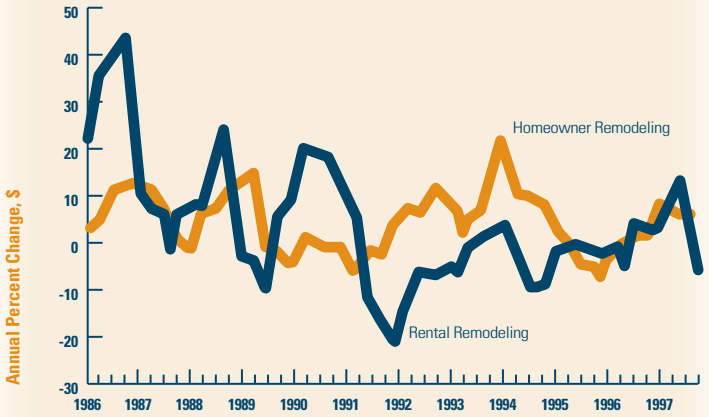
The Rental Remodeling Cycle

Because landlords and homeowners have such different motivations for remodeling, and because conditions in the rental and owner markets do not necessarily move in tandem, their cyclical spending patterns also differ. In fact, for much of the past ten years, improvement and repair expenditures for rentals and owner-occupied units have moved in nearly opposite directions. In particular, rental remodeling expenditures relate less closely to the broader business cycle and are more volatile than homeowner spending (Figure 5.4).

The forces driving the rental remodeling cycle are poorly understood. In part, this reflects the

Figure 5.4

The Rental Remodeling Cycle Differs from the Homeowner Cycle



Source: U.S. Department of Commerce C-50 Reports.

shortcomings of the Commerce Department's C-50 statistics, which include spending on vacant and seasonal units, and exclude spending by owners who use their own maintenance crews rather than hire outside contractors. In addition, rental spending estimates are much less accurate than homeowner spending estimates because of the smaller number of rental property owners providing remodeling information.

The broad swings in rental supply and demand over the past 15 years also complicate the picture. Overbuilding of rental properties in the early 1980s, followed by drastic cutbacks in production and values late in the decade, produced sharp shifts in rental investment and remodeling expenditures. Buoyed by rapidly rising rents, rental remodeling surged after the 1982 recession. When vacancy rates climbed and real rents began to fall during the late 1980s, rental property owners were under increased pressure to reposition their properties to compete for tenants.

At the same time, though, many rental property owners defaulted and their properties were sold at deep discounts. New owners were thus able to purchase properties at prices low enough to allow them to make up for deferred maintenance, and to improve their newly acquired properties while still making a profit. This may account for the high levels of rental spending throughout the late 1980s and the surge in 1990. Between 1985 and 1995, 30% of the rental stock changed ownership.

Since 1990, remodeling expenditures have generally declined, but the rate of decline has slowed somewhat. Although net operating income has improved for some owners, especially larger institutional investors with professionally managed portfolios, the stagnation of real rents through the mid-1990s was apparently enough to discourage remodeling activity.

Remodeling Behavior of Rental Property Owners

Nearly two-thirds of the rental stock is owned by individuals, and nearly 25% of these units are owned by individuals that hold only one unit (Figure 5.5). Even though owners generally manage their properties to maximize profits, many are nonprofessionals who may not fully factor in the costs of their time or the opportunity cost of their capital when assessing return on investment.

According to the 1995 Property Owners and Managers Survey, rental owners report spending almost 14% of rental income on maintenance and repairs. Institutional owners, along with individuals owning ten or more units, devote a larger share of rental income to maintenance than do individuals owning only a few units. One explanation for this

difference is that professional property managers spend more on maintenance as a long-term investment strategy. Another explanation, however, may be that small property owners do the maintenance work themselves as a way to keep costs under control. Smaller rental property owners may in fact act very much like do-it-yourself homeowners in terms of the types of maintenance and improvement projects they undertake and the places where they purchase home improvement products.

The Institute of Real Estate Management (IREM), which annually surveys rental properties to estimate maintenance expenditures, reports that spending averaged less than 9% of gross income in 1995. Because these surveys concentrate on larger, institutionally owned and managed properties, one might expect their estimates to be higher than in the POMS, but IREM uses a more specific and presumably narrower definition of maintenance.

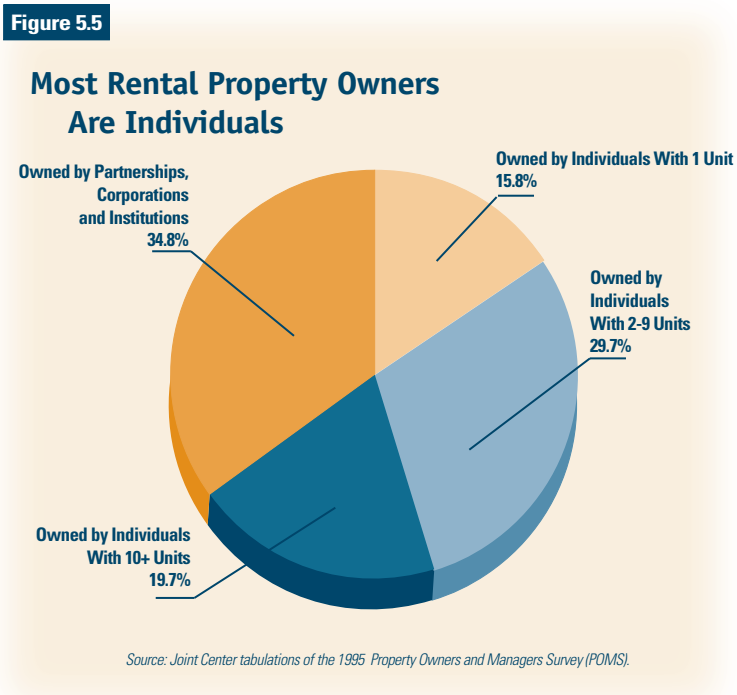
Composition of Spending

Although available databases contain insufficient detail on individual rental units, property owners, and occupant characteristics to analyze rental remodeling in the same depth as homeowner remodeling, it is possible to draw some conclusions about the determinants of spending. In particular, improvements to rental units are more likely to involve replacement or installation of new systems than improvements made to owner units. According to the 1995 Commerce Department C-50 survey data, about 60% of rental improvement spending went to replacing systems such as plumbing, HVAC, electrical, roofing, siding, and doors and windows. The share of homeowner spending for these types of improvements, reported by the AHS, is only about 36%.

Like owner-occupied units, rental units under 15 years old are less than half as likely as units over 15 years old to receive capital improvements. In addition, per unit expenditures are lower for large multi-family rental properties. Although making up fully 39% of the rental, seasonal, and vacant stock, structures with five or more units account for just slightly more than a third of total improvement spending (Table A.6).

Characteristics of the occupants, which are key determinants of homeowner spending, are of less importance to rental property owner spending. Instead, number of units owned and the form of ownership, as well as property characteristics and market conditions, appear to be the most important determinants of rental remodeling expenditures.

Figure 5.5



Source: Joint Center tabulations of the 1995 Property Owners and Managers Survey (POMS).

CHAPTER 6

The Outlook for Remodeling

SUMMARY

- **Homeowner spending on improvements, particularly for projects installed by contractors, is expected to grow slightly faster over the next 15 years than it has over the past 15.**
- **Modest increases in the number of renter households will dampen growth in rental remodeling.**
- **The growing seniors population will generate demand for remodeling projects that improve accessibility and safety for elderly household members.**
- **With "installed sales" increasing in popularity, the remodeling contractor industry is poised for change.**
- **The increased use of computer technology in the remodeling process benefits industry players and consumers alike.**

Steady growth in the number of homeowners, together with the ongoing shift toward older, larger, and more expensive homes, will support somewhat faster increases in remodeling spending in the years ahead. After averaging a compound annual rate of about 1.8% over the past 15 years (after adjusting for inflation), growth of remodeling expenditures is projected to pick up slightly to about 2.0% per year between now and 2010. As a result, remodeling will account for an increasing share of residential fixed investment.

At this higher pace, growth in spending on remodeling activities should outpace spending on home building over the coming decade. While the average number of homes built each year is likely to hold steady during this period, each successive round of home building adds to the existing housing stock and therefore to the supply of units that are candidates for remodeling.

Projecting Homeowner Spending

To develop the spending projections presented in this report, the Joint Center for Housing Studies estimated three components of growth in homeowner remodeling:

1. change in the number of owners,
2. change in the share of owners who remodel, and
3. change in the average amount spent on remodeling projects.

Of these components, change in the number of homeowners is expected to generate most of the growth in remodeling expenditures.

Number of Homeowners

The number of households is projected to increase about 1.1% annually between 1995 and 2010. With most of this growth concentrated among the age groups with the highest homeownership rates, the number of homeowners should rise about 1.5% annually—from about 65 million in 1995 to almost 81 million in 2010 (Figure 6.1). Even with no change in the share of owners who remodel or in the amount they spend, this means that the homeowner remodeling market should grow in real terms by about 1.5% per year.

To assess changes in share of owners that make improvements and the average amount they spend, we estimated statistical models using information from the 1995 American Housing Survey. These

Figure 6.1

Rising Homeownership Means More Remodeling

	Number of Households (Millions)	Homeownership Rate (Percent)	Number of Homeowners (Millions)
1980	80.8	65.6	53.0
1995	99.8	64.8	64.7
2010	116.9	69.2	80.9
Change 1980-1995	+19.0	-0.8	+11.7
Change 1995-2010	+17.1	+4.4	+16.2

Sources: 1980 American Housing Survey and Joint Center for Housing Studies.

models control for the independent influences of housing and household characteristics on the home improvement behavior of single-family owners.

As Chapter 2 explains, there are three categories of determinants of homeowner improvement activity: demographic influences (age of the household head and composition of the household), housing stock influences (age, size, and value of owner-occupied homes), and economic influences (household income).

Extrapolating from the remodeling behavior of single-family owners to the behavior of all homeowners, the models suggest that changes in these influences over the next 15 years may add about 0.5 percentage point to our projections of annual spending. All told, then, homeowner remodeling should average a compound annual growth rate of about 2.0% between 1995 and 2010. Of course, spending in any particular year will deviate from this long-term average with changes in market conditions and the overall business cycle.

Age of Head and Family Composition

While the aging of the population will drive remodeling growth by increasing the number of homeowners, it will also serve to reduce the share of owners who remodel and the average amount spent. According to Joint Center projections, the share of homeowners between the ages of 45 and 64 will increase from under 36% in 1995 to almost 45% in 2010. While owners in this age range who remodel tend to spend more than owners under age 35, the share in this age group that actually undertakes remodeling projects is smaller. Small age-related increases in average spending will not fully offset the age-related decline in the share of owners who remodel.

Meanwhile, the share of married-couple homeowners with minor children is projected to shrink between 1995 and 2010. This will be matched by a gain in the share of single-person households and married couples without minor children—populations that are somewhat less likely to undertake home improvement projects, but more likely to hire professional contractors to do the work. Changes in household composition will therefore act as a net drag—albeit a small one—on average improvement spending per homeowner.

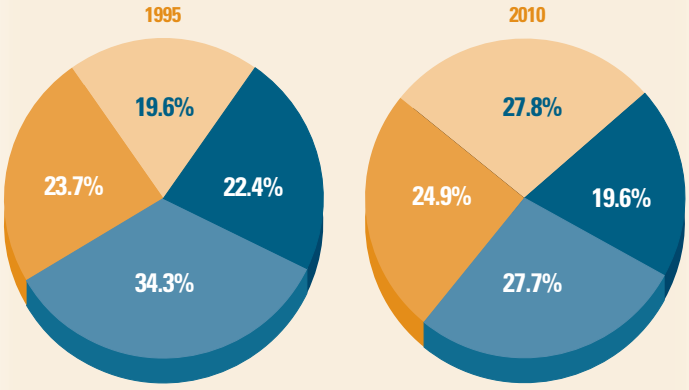
Housing Characteristics

Nevertheless, projected changes in the housing stock will more than offset the demographic drags on average spending. The most important influence is the age of the housing stock. With household growth slowing slightly from 1995 to 2010, housing construction will follow suit and the average age of the housing stock will continue to rise.

Of particular significance is the decline in the share of newer homes, which generally receive far fewer improvements than older homes. Between

Figure 6.2

The Aging of the Owner-Occupied Stock Promotes Remodeling



Distribution of Owner-Occupied Housing by Age of Structure

15 Years Old or Under
16-35 Years Old
36-55 Years Old
56 Years Old and Over

Sources: 1995 American Housing Survey and Remodeling Future Program projections.

1995 and 2010, the share of homes under 15 years old is projected to decline by almost three percentage points (Figure 6.2).

Assuming that average real values of owner-occupied homes continue to rise at about the same rate as they have over the past 15 years, the shift toward more expensive homes will contribute both to growth in the share of owners who remodel and the average amount they spend.

The average size of existing homes should also increase. Between 1985 and 1995, the median size of an owner-occupied home rose by more than 100 square feet. The slow but steady increase of about 10 square feet per year is likely to continue, with the average size of homes expanding from 1,810 square feet in 1995 to almost 2,000 square feet by 2010.

Household Income

After adjusting for inflation, the incomes of owners increased at about 0.7% per year between 1982 and 1995. Similar or larger gains are expected between 1995 and 2010 as the age distribution of the population shifts in favor of owners in their peak-earning years. Higher average incomes will contribute about one-tenth of one percent of the projected 2.0% annual average growth in remodeling spending, increasing both the share of owners that remodel and the average amount they spend.

Sensitivity of Projections

The projections of home improvement spending presented here are most sensitive to assumptions about homeownership gains. Our baseline projection assumes that age-specific homeownership will grow somewhat more slowly than in the first half of the 1990s. If future growth in homeownership does in fact match the sharp increases posted from 1991 to 1996, the number of homeowners would rise by 1.6% annually rather than 1.5%, increasing remodeling spending proportionately. Under the more conservative assumption that age-specific homeownership growth matches the pace averaged from 1982 to 1996, growth in the number of owners would cause spending to rise only 1.3%, trimming 0.2 percentage point from our baseline projection of the number of homeowners, and by extension the growth in remodeling spending.

The projections are less sensitive to assumptions about changes in average incomes, house values, house size, and age of the housing stock. In the baseline, average owner incomes, house values, and house sizes increase at the same rates over the 1995-2010 period that they did over the 1980-1995 period. The stock ages in line with long-run forecasts of housing completions and losses. Doubling either the baseline rate of increase in house

values or incomes adds about one-tenth of one percent to the projected 2.0% increase in remodeling spending. Doubling the baseline rate of increase in either house size or the age distribution of homes raises the projections by even less. Similarly, reducing the projected increases in these remodeling determinants by half lowers the projected growth rate in remodeling proportionately.

Professional Contractor and D-I-Y Markets

With the aging of the baby boom, more homeowners will pay contractors to do the work they might have done themselves when they were younger. We expect that average annual spending on contractor-installed improvements will increase more than half a percentage point faster than spending on D-I-Y improvements (Figure 6.3). Even this significant difference may be an understatement, given that it assumes age-specific probabilities of D-I-Y projects remain at 1995 levels. These probabilities in fact fell over the preceding ten years and may continue to fall.

Indeed, increased reliance on professional contractors is one of the most significant changes in the remodeling market likely to occur over the next decade. This shift should not only stimulate the remodeling spending, but also encourage manufacturers and distributors of home improvement products to capitalize on this growth by expanding their installed sales programs and by focusing on attracting contractors as customers.

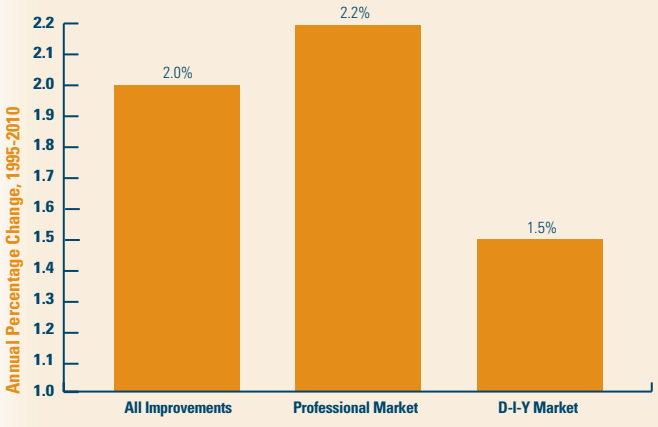
The Aging Population and Emerging Markets

Aging of the population will also expand the market for home improvements designed to address the needs of the elderly. Just as the postwar baby boom will increase the number of households in their 60s, an earlier, smaller population boom, along with increases in longevity, will increase the number of households with heads over age 75. The Joint Center projects that the number of households headed by seniors will increase by 2.3 million annually between 1995 and 2010. If current trends continue, these older Americans will be in the age group having a greater than 50% likelihood of being disabled.

At present, less than half of the seniors who have difficulties climbing stairs, taking a bath or shower, or simply getting around the house have made any home modifications to deal with these hardships. The market for adapted features such as door handles instead of knobs, modified wall sockets or light switches, modified cabinets or sink faucets, and extra handrails or grab bars is therefore already large and

Figure 6.3

Professional Installations Will Grow Faster Than D-I-Y Projects



Source: Remodeling Futures Program projections.

growing. According to surveys conducted by the American Association of Retired Persons, about nine in ten seniors would prefer to remain in their homes. These modifications would make it safer for seniors to act on that preference.

Although most baby boomers will not reach the ages when disability rates rise sharply until after 2010, they too will experience higher rates of disability over the next decade. The boomers will, however, move into their 60s with unprecedented wealth and income, and unrivaled expectations for living well into their 80s or 90s. With an eye toward staying in their homes, more of these households may choose to make modifications that will permit them to function safely and comfortably as they grow older. These modifications may include the creation of first-floor bedrooms, installation of accessibility and safety features, alterations to accommodate visiting family members, and the addition of home offices or areas for pursuing hobbies.

Home remodeling activities that improve accessibility are destined to become a high-growth market when the baby boomers begin to retire around 2010. The U.S. Census Bureau projects that the senior population will double between 1995 and 2030, with most of the growth coming after 2010.

Baby boomers are also heading for the age ranges when ownership of second homes is highest. As of 1995, second-home ownership rates were about 1.4% for those aged 35 to 44, about 2.8% for those age 45 to 54, and about 4.0% for those aged 55 to 64. Strong growth of 45 to 64 year-olds will therefore translate into growth in the number of second-home owners—regardless of whether the boomers' higher wealth and income increase their age-specific second-home ownership rates. Although spending on second-home remodeling is not measured in the database used for our projections, it is clear that the aging of the population will almost certainly drive growth in this area of spending.

Rental Property Remodeling

After strong growth in the early to mid-1980s and a brief surge in 1990-91, rental remodeling has been on the decline. This weakness reflects the softness in rental housing markets generally. The oversupply of rental units caused by favorable tax provisions in the early 1980s kept vacancy rates high and rents growing slowly over much of the 1990s. In fact, after adjusting for inflation, rents fell for much of the period.

Figure 6.4

Slow Growth in Renters Spells Slow Growth in Rental Remodeling

	Number of Renter Households (Millions)	Age of Household Head		
		Under 35	35 to 54	55 and Over
1980	27.6	13.8	6.7	7.1
1995	34.2	15.0	12.1	7.0
2010	35.9	14.4	12.7	8.8
Annual Rate of Change 1980-1995	1.6%	0.6%	5.4%	-0.1%
Annual Rate of Change 1995-2010	0.3%	-0.3%	0.3%	1.7%

Source: Joint Center tabulations of the 1980 and 1995 American Housing Surveys, and Remodeling Futures Program projections.

Although lower mortgage interest rates and discounted prices on some rental assets sold in the early 1990s helped improve net operating incomes for larger, institutionally owned and managed properties, these increases were apparently insufficient to trigger additional remodeling expenditures. On the contrary, weak markets and slower growth in the number of renter households have dampened spending.

Looking ahead, expenditures for rental property remodeling should grow, although substantially more slowly than expenditures for homeowner remodeling. As the age distribution of the population shifts in favor of the groups with the highest homeownership rates, growth in the number of renter households will slow significantly between 1995 and 2010. While the number of homeowners is expected to increase 1.5% per year over this period, the number of renter households is expected to increase by only 0.3% (Figure 6.4).

As a result of a shift in the age distribution of owners and renters, the median incomes of renters will likely grow more slowly than those of homeowners. Because the baby boomers will be reaching the peak earning years (which are also the peak homeownership years), the incomes of owners will rise faster than the incomes of renters.

In addition, the average age of the rental stock will continue to rise. An increasing share of apartments built in the 1960s and 1970s will be reaching ages where major replacements and improvements will be needed to keep the properties in good working order. Aging of the stock will therefore give remodeling a small boost.

Nevertheless, the rental remodeling market is expected to recover from the weak performance turned in during the 1990s. Rents have now begun to rise. If new construction proceeds in line with increases in demand, rental markets should be far more stable than they were in the 1980s. With net operating incomes already improving for many owners and with real rents rising, rental remodeling expenditures should slowly increase over the next 15 years.

The Outlook for Installed Sales

Apart from strong growth in the number of establishments specializing in additions and alterations, as well as in the number using computers, the characteristics of remodeling contractors have changed little over the past 20 years. Current trends in consumer demand and in building materials distribution may, however, generate significant changes in the industry.

As with most industries dominated by small businesses, failure rates in residential remodeling are high. Lacking information on how to identify qualified contractors, especially for smaller projects, increasingly brand-conscious consumers have begun to look to lumber yards and home centers to provide and guarantee installation of home products.

Responding to this demand, an increasing number of distributors has begun to offer installed sales programs. These programs initially focused on single-trade jobs such as replacing siding, roofing, and windows. More recently, however, complicated jobs like whole-kitchen and bath remodels are being sold on an installed basis. While single-trade contractors have been signing up to do installations for retailers for some time, general remodeling contractors are only now beginning to forge alliances with retailers. Although not yet vulnerable to this competition, high-end general remodeling contractors, as well as contractors serving the vast middle market, will come under increasing pressure to work through retailers' installed sales programs.

On the supply side, more manufacturers have begun to provide training and certification to contractors. One-step distributors for these manufacturers, in turn, are offering installed sales using

these certified contractors. Such certification programs may grow in popularity as distributors pressure their suppliers to ensure that the installation is done by qualified contractors.

Installed sales are likely to make some inroads among the top 10% of home improvement spenders, who account for more than half of all homeowner remodeling expenditures. These households undertake the more ambitious types of remodeling projects, which installed sales programs are only starting to target. Installed sales are poised to make even more significant inroads into the huge middle market for less complicated remodeling projects.

The impact of installed sales programs on industry structure, however, remains unclear. On the one hand, more small establishments and self-employed individuals could flourish thanks to the ability to install products for distributors. On the other hand, the lower cost of partnering with a few large firms may lead the major home improvement centers to funnel their installation business to just a few contractors or even set up their own contracting businesses.

Technology and the Remodeling Outlook

As an industry dominated by small businesses, residential remodeling has been slow to adopt technological innovation. Most contractors use computers only minimally in their business operations, but there are signs this is beginning to change. Increasingly, successful contractors are computerizing their proposal, design, and estimating procedures.

In addition, computer-aided design (CAD) software packages are becoming less expensive and easier to use. Remodeling contractors and designers are finding that these systems are an effective marketing tool to help households envision the final result. CAD drawings are useful to ensure that the client and the contractor have a similar vision of the scope of the project.

Moreover, "virtual reality tours" of homes under construction are already a popular method of marketing new homes. Although this technique is still in its infancy within the remodeling industry, its use is expected to grow in the coming years as a way to generate enthusiasm among consumers for undertaking remodeling projects.

Manufacturers and distributors of home improvement products are also pursuing the benefits of technology to improve their businesses. For example, product manufacturers and the leading distributors have established websites to promote the value of their products and services. Originally designed as a source of product information for their customers, websites are increasingly being used as an alternative sales channel.

Consumers stand to benefit from the increased use of technology in the remodeling process. CAD programs provide a better sense of the design options, as well as what the completed project will look like. Consumers also have better access to product information. Rather than having to rely exclusively on the designer or contractor, consumers are increasingly able to locate product information directly through manufacturer or distributor websites. Directories of remodeling contractors and their areas of specialization are also available on the Internet. This resource provides consumers more choice of contractors and better information in selecting the most appropriate professional for the job.

Potential Remodeling Markets

On balance, the future looks promising for businesses serving the remodeling market. With the aging of both the population and the housing stock, spending

on home improvements and repairs should climb an average of $5-6 billion per year between now and 2010. As a result, remodeling expenditures are likely to outdistance the nation's investment in new residential construction within the next 15 years.

The aging of the population also favors professionally installed improvements over do-it-yourself projects. With the baby boomers moving into their 50s and 60s, they have the financial resources to hire contractors to perform major upgrades such as additions and alterations. Rapid increases in the over-75 population are also opening up a major growth market for contractors to install equipment and make room modifications that enable seniors to remain safely and comfortably in their homes.

Meanwhile, home improvement product manufacturers and distributors have a unique opportunity to capitalize on the growing preference for professional installations. Indeed, by expanding their installed sales and certification programs, manufacturers and distributors could revolutionize practices in the remodeling industry. With the growth potential this market offers, contractors, manufacturers, and distributors have added incentives to coordinate their marketing strategies so that consumers view remodeling as an attractive, convenient, and dependable means of achieving their housing goals.

Finally, the nation's 6.5 million homes with moderate to severe structural problems are another source of improvement and repair demand. These units expose occupants to physically hazardous conditions such as unsafe plumbing, heating, and electrical systems. With the collaboration of business and government, the remodeling industry could both reach this underserved market segment and perform a useful service by rehabilitating inadequate units.

The U.S. remodeling industry has an important role to play in determining the quality of the nation's housing. Nevertheless, there are few policies that encourage improvements to or maintenance of the existing stock of homes.

Recognizing the potential contribution of the remodeling industry would not only provide economic opportunities, but also improve the quality of life for millions of American families.

Table A.1

Alternative Measures of the U.S. Remodeling Market

Source	Coverage	Estimated Market Size	Activities Not Included
U.S. Commerce Department, Survey of Expenditures for Residential Improvements and Repairs (Series C-50)	Spending by homeowners and rental property owners on improvements and repairs to homes, including improvements to property	1995 total = $111.7 billion; Owner-occupied properties = $78.6 billion; Renter-occupied properties = $33.1 billion	• Tools used for home improvements and repairs • Expenses for items not permanently attached to the home or property (e.g., appliances, furniture, rugs) • Renter expenditures for improvements and repairs to their own units
American Housing Survey	Spending by homeowners on improvements and repairs to homes, including property, plus insurance payments for home repairs	1995 homeowner total = $114.1 billion; 1995 spending on improvements = $91.2 billion (one half of total reported for the 1994-95 period); Typical annual spending in routine maintenance = $22.9 billion	• Tools used for home improvements and repairs • Expenses for items not permanently attached to the home or property (e.g., appliances, furniture, rugs) • Spending on rental units • Spending on seasonal and vacant units
Home Improvement Research Institute	Purchases of products typically used for home improvements	1995 total = $127.2 billion; Consumer market = $89.8 billion; Professional market = $37.3 billion	• Labor costs for improvements and repairs

Table A.2

Expenditures for Residential Improvements & Repairs by Property Type: 1984-97 (Billions of dollars)

	All Homes						All Owner-Occupied Homes					
Year	Total	Maintenance & Repairs	Major Replacements	Additions	Alterations	Outside Adds/Alts	Total	Maintenance & Repairs	Major Replacements	Additions	Alterations	Outside Adds/Alts
1984	69.8	28.9	13.1	6.0	14.5	7.3	46.6	16.4	6.8	5.3	11.7	6.4
1985	80.3	35.4	16.1	4.0	17.6	7.2	50.8	17.5	9.9	3.4	13.5	6.5
1986	91.3	36.0	16.7	7.4	21.2	10.0	57.7	17.5	9.0	6.4	16.5	8.4
1987	94.1	38.2	15.9	9.6	21.6	8.8	58.1	18.4	7.7	8.2	16.3	7.5
1988	101.1	40.9	16.9	11.3	22.7	9.3	65.4	19.9	9.9	9.3	18.3	8.1
1989	100.9	42.7	18.4	6.8	23.1	9.8	62.8	19.9	10.3	6.5	17.6	8.6
1990	106.8	51.3	18.2	8.6	21.9	6.8	63.3	22.9	10.6	7.2	17.3	5.4
1991	97.5	49.8	16.7	7.9	16.1	7.0	61.9	25.1	10.1	6.8	13.9	6.0
1992	103.7	45.2	18.4	6.8	22.7	10.7	69.9	24.9	10.1	6.2	19.8	8.8
1993	108.3	41.7	20.8	12.8	24.8	8.3	72.9	22.1	14.2	11.5	18.5	6.5
1994	115.0	43.0	23.2	9.6	28.7	10.5	81.7	25.2	15.9	8.8	23.0	8.9
1995	111.7	42.0	24.9	7.9	26.9	9.9	78.6	26.3	18.3	6.6	19.2	8.2
1996	114.9	37.0	24.5	12.0	30.1	11.4	80.1	21.7	18.1	10.3	21.7	8.4
1997	118.6	38.6	24.5	11.0	33.0	11.4	85.3	26.6	17.6	8.8	23.8	8.4

	Owner-Occupied Single-Family Homes			Rental, Vacant and Seasonal Properties					
	Payments for Building Materials Purchased by Owner:								
Year	Total Payments to Contractors or Hired Labor	For Jobs Done by Owner (D-I-Y)	For Jobs Done Under Contract (B-I-Y)	Total	Maintenance & Repairs	Major Replacements	Additions	Alterations	Outside Adds/Alts
1984	32.2	9.7	2.0	23.2	12.5	6.2	0.7	2.8	0.9
1985	36.2	9.9	1.6	29.5	17.9	6.2	0.6	4.1	0.7
1986	41.2	10.3	2.8	33.6	18.5	7.7	1.0	4.7	1.7
1987	41.4	10.9	2.5	36.0	19.9	8.2	1.4	5.3	1.3
1988	46.8	11.6	2.4	35.7	21.0	7.0	2.1	4.4	1.2
1989	46.2	11.6	2.1	38.1	22.8	8.1	0.4	5.5	1.3
1990	46.5	11.0	2.2	43.5	28.5	7.6	1.4	4.7	1.4
1991	44.3	11.5	2.4	35.6	24.7	6.6	1.1	2.2	1.0
1992	51.5	12.9	3.0	33.9	20.2	8.3	0.6	2.9	1.9
1993	54.9	13.1	2.7	35.4	19.6	6.6	1.2	6.3	1.7
1994	60.2	14.2	2.8	33.3	17.8	7.4	0.9	5.7	1.6
1995	59.7	12.3	3.4	33.1	15.8	6.6	1.4	7.7	1.7
1996	58.3	15.1	2.6	34.8	15.3	6.4	1.8	8.4	3.0
1997	62.9	15.4	3.9	33.3	12.0	6.9	2.2	9.2	3.0

Source: U.S. Commerce Department, Expenditures for Residential Improvements and Repairs (C-50).

Table A.3

Expenditures for Professional and Do-It-Yourself Improvements By Homeowners: 1994-95

	Professional				Do-It-Yourself				Total			
	No. of Homeowners (000s)	Share of Homeowners (%)	Mean Expd. ($)	Total Expd. ($ Billions)	No. of Homeowners (000s)	Share of Homeowners (%)	Mean Expd. ($)	Total Expd. ($ Billions)	No. of Homeowners (000s)	Share of Homeowners (%)	Mean Expd. ($)	Total Expd. ($ Billions)
TOTAL	22,809	41.0	5,086	116.0	16,718	30.0	2,070	34.6	33,795	60.7	5,102	172.4
Kitchen Projects	2,065	3.7	5,499	11.4	2,102	3.8	2,229	4.7	3,856	6.9	4,446	17.1
Major Remodel*	256	0.5	18,782	4.8	307	0.6	7,280	2.2	338	0.6	18,430	6.2
Minor Remodel	1,703	3.1	2,296	3.9	1,680	3.0	873	1.5	3,313	6.0	2,157	7.1
Addition/Alteration	282	0.5	9,363	2.6	321	0.6	3,075	1.0	624	1.1	6,048	3.8
Bath Projects	2,148	3.9	6,457	13.9	2,816	5.1	2,094	5.9	4,700	8.4	4,364	20.5
Major Remodel*	357	0.6	12,187	4.4	343	0.6	4,113	1.4	455	0.8	11,823	5.4
Minor Remodel	1,484	2.7	1,152	1.7	2,162	3.9	533	1.2	3,663	6.6	1,032	3.8
Addition/Alteration	522	0.9	14,959	7.8	568	1.0	5,876	3.3	1,109	2.0	10,236	11.4
Room Additions/ Alterations	3,306	5.9	5,451	18.0	3,478	6.3	2,225	7.7	6,818	12.3	4,246	28.9
Bedroom	417	0.8	8,054	3.4	658	1.2	2,437	1.6	1,187	2.1	4,664	5.5
Other Interior Room	1,099	2.0	9,199	10.1	1,536	2.8	2,743	4.2	2,713	4.9	5,478	14.9
Other Interior Improvement	1,436	2.6	1,292	1.9	780	1.4	522	0.4	2,271	4.1	1,830	4.2
Deck/Porch	830	1.5	3,243	2.7	1,026	1.8	1,477	1.5	1,932	3.5	2,277	4.4
Disaster Repairs	990	1.8	7,851	7.8	268	0.5	4,602	1.2	1,324	2.4	7,148	9.5
Replacements	18,071	32.5	2,672	48.3	11,619	20.9	784	9.1	26,566	47.7	2,351	62.4
Roofing	3,663	6.6	3,286	12.0	819	1.5	1,568	1.3	4,638	8.3	2,986	13.8
Siding	1,286	2.3	4,859	6.3	470	0.8	1,756	0.8	1,968	3.5	4,200	8.3
Plumbing/Pipes	1,070	1.9	914	1.0	750	1.3	311	0.2	2,375	4.3	676	1.6
Electrical System	2,321	4.2	637	1.5	1,337	2.4	268	0.4	3,760	6.8	524	2.0
Window/Door	4,239	7.6	1,769	7.5	3,312	6.0	671	2.2	7,724	13.9	1,394	10.8
Plumbing Fixtures	1,472	2.6	764	1.1	1,821	3.3	210	0.4	3,387	6.1	461	1.6
Insulation	977	1.8	626	0.6	1,454	2.6	247	0.4	2,481	4.5	443	1.1
Flooring/Paneling/ Ceiling	4,066	7.3	1,482	6.0	2,899	5.2	537	1.6	7,005	12.6	1,172	8.2
HVAC	3,853	6.9	2,713	10.5	579	1.0	1,577	0.9	4,695	8.4	2,588	12.2
Appliances/ Major Equipment	4,855	8.7	377	1.8	3,774	6.8	256	1.0	8,860	15.9	335	3.0
Exterior Projects	4,985	9.0	3,353	16.7	4,330	7.8	1,371	5.9	11,561	20.8	2,932	33.9
Garage/Carport	186	0.3	8,007	1.5	173	0.3	4,048	0.7	392	0.7	6,337	2.5
Other Exterior Improvement	4,864	8.7	3,131	15.2	4,188	7.5	1,250	5.2	11,341	20.4	2,770	31.4
Total Homeowners**	55,636											

** Defined as professional improvements excluding additions and alterations of more than $10,000 for kitchen projects and more than $5,000 for bath projects; do-it-yourself improvements of more than $4,000 for kitchen projects and more than $2,000 for bath projects.*
*** Excludes owners of mobile homes, condominiums and co-ops.*

Note : Missing data on expenditures are imputed. Missing data on method of installation are included in total, but not in professional or D-I-Y.
Source: Joint Center tabulations of the 1995 American Housing Survey.

Table A.4

Household Changes and Remodeling Activity: 1994-95

Household Type/ Household Change	Households Total (000s)	Total Improvements: Households Reporting Improvements (000s)	Total Improvements: Probability of Making Improvements (%)	Total Improvements: Avg. Expd ($)	Room Additions/Alterations: Households Reporting Improvements (000s)	Room Additions/Alterations: Probability of Making Improvements (%)	Room Additions/Alterations: Avg. Expd ($)	Kitchen Projects: Households Reporting Improvements (000s)	Kitchen Projects: Probability of Making Improvements (%)	Kitchen Projects: Avg. Expd ($)
Married With Children*										
Added Person(s)**	1,992	1,524	76.5	6,276	448	22.5	4,539	191	9.6	3,844
Added Child	1,618	1,247	77.0	5,534	361	22.3	3,859	161	10.0	3,341
Person(s) Left	2,432	1,630	67.0	5,573	352	14.5	5,552	197	8.1	4,339
No Change	7,361	5,214	70.8	6,044	1,245	16.9	5,002	599	8.1	6,139
Married Without Children										
Added Person(s)	1,006	660	65.6	5,258	137	13.6	2,760	83	8.2	4,284
Person(s) Left	3,399	2,210	65.0	4,334	389	11.4	3,943	213	6.3	3,444
No Change	11,913	7,210	60.5	4,475	1,148	9.6	4,269	682	5.7	4,309
Single										
Person(s) Left	1,128	642	56.9	4,539	103	9.1	2,942	49	4.3	3,881
No Change	5,510	2,704	49.1	3,325	364	6.6	2,999	154	2.8	3,549
Other										
Added Person(s)	1,885	1,129	59.9	4,473	216	11.5	4,096	134	7.1	3,654
Added Child	156	102	65.2	2,628	29	18.4	2,686	8	4.8	1,240
Person(s) Left	1,255	781	62.2	4,551	171	13.6	3,266	100	7.9	3,872
No Change	2,940	1,748	59.5	4,001	268	9.1	2,923	183	6.2	4,497

Household Type/ Household Change	Households Total (000s)	Bath Projects: Households Reporting Improvements (000s)	Bath Projects: Probability of Making Improvements (%)	Bath Projects: Avg. Expd ($)	Replacements: Households Reporting Improvements (000s)	Replacements: Probability of Making Improvements (%)	Replacements: Avg. Expd ($)	Exterior Projects: Households Reporting Improvements (000s)	Exterior Projects: Probability of Making Improvements (%)	Exterior Projects: Avg. Expd ($)
Married With Children										
AddedPerson(s)	1,992	267	13.4	6,042	1,225	61.5	2,587	614	30.8	2,654
Added Child	1,618	224	13.8	5,185	989	61.1	2,242	525	32.4	2,584
Person(s) Left	2,432	255	10.5	4,335	1,284	52.8	2,311	589	24.2	3,069
No Change	7,361	796	10.8	4,161	4,108	55.8	2,296	2,055	27.9	3,466
Married Without Children										
Added Person(s)	1,006	116	11.5	5,249	557	55.4	2,506	213	21.2	3,010
Person(s) Left	3,399	227	6.7	3,346	1,790	52.7	2,294	696	20.5	2,953
No Change	11,913	767	6.4	4,349	5,687	47.7	2,343	2,267	19.0	2,608
Single										
Person(s) Left	1,128	61	5.4	1,680	514	45.6	2,141	199	17.7	5,033
No Change	5,510	231	4.2	2,632	2,198	39.9	2,113	708	12.9	2,092
Other										
Added Person(s)	1,885	152	8.1	4,833	909	48.2	2,121	310	16.4	2,275
Added Child	156	14	9.0	1,284	83	53.4	1,141	39	24.7	1,745
Person(s) Left	1,255	126	10.0	5,528	611	48.7	2,099	202	16.1	2,395
No Change	2,940	246	8.4	4,099	1,411	48.0	2,165	464	15.8	1,895

Notes: Analysis limited to non-mover households, defined as survey respondents residing in the same dwelling unit in both 1993 & 1995. Mobile homes, condominiums and co-ops are excluded.
** Refers to those with children under the age of 18. Married households with children 18 or over are included in the "Married without Children" category.*
*** Includes "Added a Child". "Added Person(s)" and "Person(s) Left" indicate any sort of change in household composition.*

Source: Joint Center tabulations of the 1993 and 1995 American Housing Surveys.

Table A.5

Distribution of Remodeling Contractors by Annual Receipts: 1992

	More than 50% of Receipts from:					
	Additions & Alterations		Maintenance & Repair		New Construction	
Residential General Contractors– Single-Family with Annual Receipts of:	Number of Establishments	Percent	Number of Establishments	Percent	Number of Establishments	Percent
Less than $100,000	14,037	35.6	4,334	48.3	9,010	20.0
$100-249,000	12,437	31.5	2,691	30.0	10,765	23.9
$250-499,000	7,146	18.1	1,126	12.5	9,632	21.4
$500-999,000	3,697	9.4	547	6.1	8,160	18.1
$1,000,000 and Over	2,149	5.4	279	3.1	7,463	16.6
Total Establishments	39,466	100.0	8,977	100.0	45,030	100.0

	More than 50% of Receipts from:					
	Additions & Alterations		Maintenance & Repair		New Construction	
Special Trade Contractors with Annual Receipts of:	Number of Establishments	Percent	Number of Establishments	Percent	Number of Establishments	Percent
Less than $100,000	11,036	40.4	18,074	48.3	26,201	32.5
$100-249,000	8,658	31.7	11,522	30.8	27,180	33.7
$250-499,000	4,258	15.6	4,800	12.8	14,926	18.5
$500-999,000	2,093	7.7	2,052	5.5	6,036	7.5
$1,000,000 and Over	1,254	4.6	945	2.5	6,376	7.9
Total Establishments	27,299	100.0	37,393	100.0	80,719	100.0

Note: Residential general contractors include SIC 1521 general contractors - single family. Residential special trade contractors include SIC 17 special trade contractors reporting 50% or more receipts in residential activity.

Source: Joint Center tabulations of the 1992 Census of Construction Industries.

Table A.6

Average Annual Expenditures for Improvements and Repairs to Rental, Vacant and Seasonal Properties: 1993-95 (Millions of 1995 dollars)

	Number of Units in Structure						
Type of Improvement or Repair	1 Unit	2-4 Units	5-49 Units	50-99 Units	100-199 Units	200+ Units	All
Additions to Structure `	699.6	216.7	172.7	28.3	53.3	12.3	1,183.0
Bathroom	78.7	54.5	28.3	2.7	3.4	3.8	171.4
Kitchen	32.6	35.1	37.2	4.9	3.2	2.5	115.4
Other	588.4	127.1	107.2	20.7	46.7	6.0	896.2
Alterations to Structure	2,941.8	1,370.4	985.1	141.1	490.5	378.8	6,307.7
Plumbing	449.7	224.2	74.5	8.8	71.3	12.9	841.4
Insulation	50.5	10.1	21.7	0.2	6.8	4.4	93.8
Heating, Ventilation, Air Conditioning	294.5	85.0	91.2	14.5	26.6	5.2	517.0
Electrical and Security System	101.0	77.1	30.5	19.1	29.8	20.7	278.2
Paneling, Tile or Flooring	502.4	114.7	151.4	28.1	69.9	29.4	896.0
Bathroom and Kitchen Remodeling	461.4	238.5	296.2	24.9	122.7	131.8	1,275.6
Siding	211.9	223.9	0.0	8.5	19.1	47.0	510.3
Windows and Doors	407.7	137.9	93.9	7.4	19.9	15.5	682.3
Other	462.7	259.1	225.7	29.4	124.4	111.9	1,213.2
Additions and Alterations to Property	799.2	255.3	384.2	73.2	164.6	121.9	1,798.3
Additions	214.1	111.5	106.7	43.2	13.2	19.7	508.5
Recreational Facilities	258.7	1.6	93.9	2.9	8.8	9.5	375.5
Driveway or Walk	154.2	20.5	115.7	2.8	74.7	10.1	378.0
Fence	109.2	49.3	28.9	17.2	13.6	18.0	236.1
Other	62.9	72.5	38.9	7.1	54.3	64.6	300.3
Maintenance and Repairs	8,193.4	3,298.4	3,183.2	1,040.7	1,048.7	1,908.0	18,672.4
Painting	2,117.2	794.6	629.7	194.9	307.1	389.1	4,432.7
Wallpapering	178.8	171.1	178.5	121.4	70.1	109.3	829.2
Plumbing Repair	792.2	399.5	360.5	113.0	60.7	89.5	1,815.5
Repair Heating, Ventilation, Air Conditioning	422.8	213.4	158.7	46.2	46.2	104.6	991.9
Electrical	262.0	36.7	107.5	14.4	21.0	38.1	479.7
Siding	300.4	134.7	251.6	9.3	4.4	75.4	775.9
Roofing	969.6	290.8	138.6	38.6	56.4	93.9	1,587.9
Flooring	372.4	226.1	238.0	41.4	37.9	107.8	1,023.5
Windows and Doors	248.3	109.4	137.2	18.2	11.1	26.0	550.2
Recreational Facilities	145.8	3.7	51.8	19.1	17.2	21.6	259.1
Other	2,383.9	918.3	931.0	424.3	416.6	852.9	5,926.9
Major Replacements	3,193.7	1,530.8	1,099.6	357.2	422.3	333.0	6,936.5
Plumbing Fixtures	104.2	141.3	58.1	2.9	15.0	7.7	329.2
Water Heater, Garbage Disposal or Laundry Tub	426.1	115.2	69.6	41.0	12.1	28.6	692.7
Heating, Ventilation, Air Conditioning	343.5	164.5	231.9	27.4	52.0	50.5	869.7
Wiring	208.2	87.3	7.6	0.7	0.2	9.5	313.3
Siding	235.3	59.3	4.4	11.7	9.5	48.8	369.0
Roof	1,183.3	439.5	308.5	74.8	144.1	73.4	2,223.6
Windows and Doors	397.9	254.6	208.4	34.8	122.5	48.3	1,066.6
Other	295.1	269.2	211.1	163.8	66.8	66.2	1,072.3
TOTAL	15,827.7	6,671.5	5,824.9	1,640.5	2,179.5	2,753.8	34,898.0

Source: Joint Center tabulations of U.S. Commerce Department, Expenditures for Residential Improvements and Repairs (C-50 micro-data).

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